



**5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

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**6. An explanation of the rule, including the agency's reasons for initiating the rule, including the statutory citation to the exemption from regular rulemaking procedures:**

**A. Authorization**

The Department is adopting interim rules required under Laws 1997, Chapter 287, §§ 56(B) and (C). The session law exempts this interim rulemaking from the rulemaking provisions at A.R.S. Title 41, Chapter 6, Article 3, but requires the Department to submit the interim rules to the Secretary of State for publication in the Arizona Administrative Register and provide for a 60 day period after publication for interested parties to comment on the proposed interim rules. The Notice of Proposed Rulemaking was published on August 18, 2000 at 6 A.A.R. 3049, August 18, 2000. Oral proceedings were held in Tucson on September 20, 2000 and in Phoenix, Arizona on September 21, 2000. The 60 day comment period closed on October 23, 2000. The Department received one oral comment and eight letters containing written comments. These comments are discussed in Section 11, below. As required under Laws 1997, Chapter 287, §§ 56(C), these interim rules were approved by the Attorney General pursuant to A.R.S. § 41-1044 and became effective upon approval by the Attorney General. These rules shall remain in effect until they are replaced with final rules.

**B. Purpose of the Rules**

In 1997, the Legislature enacted Senate Bill 1452 (Laws 1997, Chapter 287) intended as a comprehensive reform of the Water Quality Assurance Revolving Fund (WQARF), Arizona's version of the federal "superfund" program. The intent of the new legislation is to provide an efficient, equitable process for the remediation of soil and water. These interim rules implement provisions of the comprehensive WQARF revision.

**C. Overview of the Rules**

The following is a brief summary, intended to serve as a road map for the rules:

Article 2, Preliminary Investigations and Site Scoring, governs the performance of preliminary investigations at the site of a reported release or threatened release of a hazardous substance and adopts the eligibility and evaluation site scoring model that was established by the Department in 1996.

Article 3, Public Information, governs notices to the public, opportunities for public comment, and the location of informational repositories maintained by the Department or others.

Article 4, Remedy Selection, is the heart of this rulemaking. Broad in scope, this Article governs the WQARF process from remedial investigations and feasibility studies through the design, implementation and completion of remedies. Article 4 defines the community involvement process, as it applies to the Department and to parties outside of the agency. Requirements governing Departmental approval of remedial action work performed by persons outside of the Department are established. Article 4 also establishes rules governing early response actions.

Article 5, Interim Remedial Actions, establishes a procedure that allows the Department to provide quick, short-term or interim solutions to water quality problems arising in wells due to the spread of hazardous contamination originating at a WQARF site.

**D. Background of the Rules**

**1. The 1986 WQARF Statute ("Old WQARF")**

The Water Quality Assurance Revolving Fund (WQARF), Arizona's version of the federal "superfund" program, was established by the Legislature in 1986 to address sites that pose actual or potential risks to public health, welfare and the environment due to historical soil or water contamination. The WQARF program was modeled on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the federal superfund statute. Contaminated sites were addressed using a combination of funds from WQARF and private responsible parties. The Arizona Department of Environmental Quality (ADEQ) could either expend public funds to clean up contaminated sites and seek reimbursement from responsible parties or compel responsible parties to clean up the site through administrative and judicial means.

Both CERCLA and WQARF originally established a “joint and several” liability scheme for parties that were responsible for contaminating a site. Under joint and several liability, one responsible party could be held liable for the entire cost of the cleanup at a site where there are numerous responsible parties.

Over time, many came to believe that the original WQARF statutory scheme provided an ineffective means for addressing contaminated soil and groundwater. Critics argued that joint and several liability was used to prompt settlement by responsible parties whose “pockets” were deep enough, leaving them to seek contribution towards cleanup costs from other responsible parties. They argued that this liability scheme imposed an unfair burden on the first-identified parties to investigate and prove the liability of other parties through costly and time-consuming litigation.

Others claimed that the selection of cleanup goals was flawed and the process for determining methods to cleanup a site were laborious. Specific cleanup criteria were not provided in statute. However, Maximum Contaminant Levels established under the Safe Drinking Water Act for tap water were usually adopted as goals within the aquifer for groundwater sites. Controversy ensued over whether it is feasible or cost-effective to restore every aquifer to drinking water quality. Many argued that the costs of aquifer restoration are often prohibitive and the likelihood of success doubtful at many sites.

Finally, inadequate funding for the program was blamed for delays in the cleanup of contaminated sites. The program was established with Legislative intent to provide \$5 million in annual funding. However, funding was sporadic and often inadequate to support cleanup efforts, especially at sites where no responsible parties are identified or no solvent parties remain.

## **2. The 1997 WQARF Statute (“New WQARF”)**

In 1995, WQARF became the subject of a comprehensive review. The Groundwater Cleanup Task Force was established by ADEQ and the Arizona Department of Water Resources in December, 1995 to provide recommendations for reform of the WQARF program. The Task Force was comprised of a broad cross-section of interested parties including, public stakeholders, private stakeholders, and technical experts.

In 1996, the Legislature enacted significant revisions to the WQARF program. The intent of that legislation, HB 2114 (Laws 1996, Chapter 259), was to lay the groundwork for an even more comprehensive revision of the program. HB 2114 established the Joint Select Committee on WQARF to conduct a broad examination of the WQARF program and make recommendations to reform the program to the Legislature. The Joint Select Committee was mandated to consider the recommendations of the Groundwater Task Force regarding administrative and legislative improvements to WQARF.

The Task Force and hundreds of others spent, literally, tens of thousands of hours examining various aspects of Arizona’s cleanup programs as well as similar programs in other states and at the federal level. The deliberations of the Task Force ended in November, 1996 and their recommendation were reported to the Joint Select Committee on WQARF on December 23, 1996. In January, 1997, the legislature began the process of drafting new WQARF legislation. After extensive deliberation, the legislation was passed in the form of Senate Bill 1452 and was filed with the Secretary of State on April 30, 1997 as Laws 1997, Chapter 287.

The major provisions of Laws 1997, Chapter 287 are as follows:

### **Proportionate Liability**

Under new WQARF, liability for costs of the cleanup of contaminated sites is proportionate rather than joint. Cleanup costs are proportionately allocated among responsible parties using a process defined in statute. Identification of responsible parties and the allocation of cleanup costs are the responsibilities of the Department. A non-judicial allocation hearing process is available for the resolution of disputes regarding the Department’s allocations.

### **Program Funding**

The adoption of a proportionate liability system increased the need for adequate and dedicated program funding. To ensure that WQARF program funding is sufficient to administer the program and to pay allocated, uncollectible orphan shares, the legislature supports the WQARF program with an annual \$18 million expenditure.

### **Site Prioritization**

New WQARF calls for sites to be prioritized with a greater emphasis on risk to human health. The statute provides a process to score sites according to actual and potential exposure to hazardous substances. This score and other factors are considered when prioritizing the expenditure of WQARF funds.

### **Cleanup Methods and Goals**

New WQARF also allows increased flexibility in selection of groundwater cleanup methods and levels. ADEQ is authorized to adopt rules for remedy selection that incorporate analysis of a range of cleanup alternatives, from remediation of the contamination to no action. Significantly, the statute clarifies that cleanup need not always result in achievement of drinking water standards in the aquifer itself.

### **Community Involvement**

New WQARF provides for enhanced community involvement and public participation at all stages of the cleanup process. The statute establishes a process to encourage active community involvement, including provisions for notices, detailed community involvement plans, and the formation of a community advisory board for each site.

#### Settlements Encouraged

Finally, the new WQARF process encourages prompt settlements as an alternative to litigation. The Department is authorized to offer a 25% discount to responsible parties who settle after the Department provides notice to them of their proportionate share of liability.

### 3. Today's Rulemaking

These rules were developed with extensive stakeholder participation. After the enactment of Laws 1997, Chapter 287, the Department held hundreds of meetings over several years to discuss issues related to the implementation of Laws 1997, Chapter 287. The resulting rules are the product of numerous, intensive discussions with interested parties including, public stakeholders, private stakeholders, and technical experts.

Today's rulemaking is somewhat removed from the broad issues of liability allocation and program funding. The Legislature addressed these and other issues, including responsible party searches, in great detail in their drafting of the new WQARF statute. These rules do not revisit issues that were adequately addressed in statute. Instead, this rulemaking focuses on the other essential elements of the legislation. Therefore, these rules, even more than most, must be read in close conjunction with the underlying statutes.

#### E. Overview of the WQARF Process

The purpose of this Section is to briefly explain the entire WQARF process. As indicated in Section D dealing with the background of the rules, this rulemaking does not address all of the WQARF process. This Section is intended to clarify how this rulemaking fits into the broader context of the WQARF statutory framework. A more detailed description of these rules can be found in Section F.

It is important to note that many of these rules allow other parties to perform activities in lieu of the Department. However, for the sake of brevity, this overview focuses on the scenario in which the Department is conducting the cleanup.

#### Preliminary investigations

The WQARF process begins when the Department receives information about a release or potential release of a hazardous substance. This information may come from a citizen complaint, from an investigation conducted by the Department or from an investigation conducted outside of the Department. If, based on the Department's initial screening of the information, it appears that a release has occurred or may occur and that no other program is addressing the release, the Department conducts a preliminary investigation.

The purpose of the preliminary investigation is to confirm the release or potential release and determine whether further investigation or action is necessary. The preliminary investigation is not a complete investigation to determine the extent of the contamination nor is its purpose to identify the parties responsible for the contamination. If, upon completion of the preliminary investigation, the Department determines that no additional investigation or action is necessary, the site is dropped from further consideration. If the Department determines that additional investigation or action is necessary, the site is scored using the eligibility and evaluation model and listed on the WQARF site registry.

#### Site Scoring

The eligibility and evaluation site scoring model is a tool to evaluate the actual and potential risk to public health, welfare, and the environment from a release or threatened release of a hazardous substance. The eligibility and site scoring model includes a quantitative section where a point total is assigned based on weighted factors. In addition, the model lists certain qualitative factors to be considered in determining the priority for assignment of staff resources and WQARF funding to a particular site.

The scoring of a site does not necessarily mean that the site poses a risk to human health, welfare, or the environment. It means that the site has or may have contamination above a regulatory standard and further investigation is necessary to determine the appropriate action. There is no threshold score for placement on the registry.

#### The Site Registry

The site registry provides public access to information on WQARF sites. The registry replaces the old WQARF Priority List and provides a listing of sites based on the relative risk posed by contamination at each listed site. The registry contains a brief description of each site, the site's score, and the current status of the cleanup. The registry is updated regularly and is published annually in the *Arizona Administrative Register* and in a state-wide newspaper. The Department also maintains a web site and conducts meetings throughout the state to provide information on registry sites.

Any person may request that a site or a portion of a site be rescored on the registry. After determining that the information submitted is sufficient to take action, the Department publishes notice of the request and accepts public

comment. Any changes to the score or status of the site are published in the registry. Rescoring on the registry may be requested by any person no more often than once a year.

The statutory provisions governing the maintenance of the WQARF site registry and the process for requesting the rescoring of a site are sufficiently specific that no rules regarding the WQARF site registry have been promulgated or are included in this rulemaking.

#### Responsible Party Search

If the Department determines that cost recovery may be appropriate at a site, the Department initiates a responsible party search that proceeds concurrently with the remedy selection process. The Department uses information gathered in the responsible party search to determine the financial viability and the legal liability of potentially responsible parties (PRPs). The Department is required to use its best efforts to identify all persons who may be liable for cost recovery. Identification of PRPs enables the Department to allocate proportional shares of liability among the identified responsible parties in order to finance the remedy.

The statutory provisions governing the responsible party search are sufficiently specific that no rules regarding the responsible party search have been promulgated or are included in this rulemaking.

#### Community Involvement

The WQARF program provides for extensive community involvement to ensure that the public is apprised of activity in its neighborhoods and is aware of the potential risks associated with any suspected contamination. The program provides the public with opportunities to be directly involved in the process beginning with the investigation of the contamination and continuing through the completion of the cleanup of the site.

##### *The Community Involvement Area*

Within 90 days after placing a site on the registry, the Department establishes a preliminary community involvement area (CIA). The preliminary CIA is based on the boundary of the contamination and on site-specific factors, including proximity of the site to schools, parks, or potentially affected water providers. The purpose of the preliminary CIA is to establish the geographic location of potentially interested or affected parties prior to the development of a formal community involvement plan.

The statutory provisions governing the establishment of the community involvement area are sufficiently specific that no rules regarding the community involvement area have been promulgated or are included in this rulemaking.

##### *"289.02" Notice*

After the CIA is established, the notice required under A.R.S. § 49-289.02 is sent to residents, commercial occupants, and owners of registered wells within the CIA. The notice contains available information regarding the hazardous substance contamination at the site, the site's score, the ways that the contaminants may reach human health and the environment, and the possible health impacts of the exposure, if any. The notice also identifies Department personnel to be contacted for further information regarding the site.

The statutory provisions governing the notice under A.R.S. § 49-289.02 are sufficiently specific that no rules regarding the notice have been promulgated or are included in this rulemaking.

##### *"287.03" Notice*

Prior to proceeding with the remedial investigation, the Department prepares a scope of work, a fact sheet and an outline of the community involvement plan. The Department provides notice required under A.R.S. § 49-287.03 to potentially liable parties and other interested persons within the CIA of the availability of the scope of work, the fact sheet and outline of the community involvement plan, and of the opportunity to comment on the documents. The Department also provides for 1 or more public meetings.

##### *Community Involvement Plan*

Before the Department conducts a remedial investigation and feasibility study at a site, a community involvement plan (CIP) is developed. The CIP establishes the community advisory board and provides for notices, notifications, and the distribution of public information. The purpose of the community advisory board is to advise the Department, the public, and interested parties of issues and concerns related to the cleanup. The community advisory board is composed of a cross-section of interested parties and affected groups and the members are chosen by a selection committee.

If a person other than the Department wishes to conduct work at a site or a portion of a site, alternate community involvement processes may apply. If a CIP has been prepared, community involvement activities must be conducted in accordance with the plan. If the Department has not initiated work on a site, a CIP may not have been prepared. In that case, a person may develop a plan for approval and adoption by the Department or may conduct community involvement activities that are appropriate to the scope and schedule of the work performed. If no plan has been developed or adopted, minimum requirements are set out in Article 4 for conducting community involvement activities apply.

#### Agreement to Conduct Work

A party may enter into an agreement with the Department if they wish to perform work at a site instead of the Department. Allowing another party to perform work at a site permits the Department to work on other sites and provides a party conducting the cleanup with a way to get some of the lower priority sites or portions of sites cleaned up faster. The party must agree to clean up the site following the remedial investigation and feasibility study process.

The statutory provisions governing the agreement to conduct work are sufficiently specific that no rules regarding the agreement to conduct work have been promulgated or are included in this rulemaking.

#### The Remedial Investigation

The purpose of a remedial investigation is to collect enough information to determine the appropriate cleanup actions needed at the site. The information collected includes: the physical characteristics of the site; the nature, extent and sources of the contamination; and the actual and potential impacts of contaminants on the site to public health, welfare and the environment. The remedial investigation also identifies present and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be impacted by the contamination.

After the information is collected and the conditions at the site are known, the Department holds public meetings to discuss the site and to determine the remedial objectives. The Department invites land owners, local governments, water providers, and the public to discuss uses impaired or lost due to the contamination as well as future uses which could be impacted by the contamination.

After the meetings the Department prepares a report of the proposed remedial objectives for the site that lists the uses, the time-frames when action is needed to protect or provide for the use, and the duration of the actions needed. The Department accepts and considers public comment on the proposed remedial objectives and holds additional public meetings depending upon the level of public interest.

#### The Feasibility Study

Using the information collected in the remedial investigation, the feasibility study identifies options that may achieve remedial objectives. The goal of the feasibility study is to identify the best option or options for meeting the remedial objectives. Different options are identified and compared against each other to select the option which will be included in the proposed remedial action plan.

#### Proposed Remedial Action Plan

After the feasibility study is completed, the Department prepares a proposed remedial action plan that describes the proposed cleanup or remedy and provides an opportunity for public comment. The plan describes the means by which the proposed remedy will meet each of the remedial objectives identified in the remedial investigation and how accomplishment of the remedial objectives is to be measured. The plan also provides an estimate of the cost of the cleanup.

If the Department intends to seek recovery of costs and conduct a cost allocation proceeding, the Department provides notice to potentially responsible parties of the opportunity to submit their cleanup costs and of the opportunity to object to costs submitted by other parties. Any approved costs may be used as a credit against potential liability in a settlement or allocation. The costs of the cleanup are finalized in the record of decision.

#### Actions Taken Before Remedy Selection

Many times some action is needed before the formal process for selecting a cleanup occurs. There are 3 different ways to address more immediate cleanups.

##### *Emergency Response Actions*

Emergency response actions are outside of the remedy selection process, but are critical to the WQARF program. Emergency response actions are taken when a spill or some other action presents an immediate emergency situation. They are short-term actions to alleviate the emergency.

The statutory provisions governing emergency response actions are sufficiently specific that no rules regarding emergency response actions have been promulgated or are included in today's rulemaking.

##### *Early Response Actions*

Early response actions (ERA) are certain remedial actions initiated by the Department or any person prior to selection of a remedy at a site. In many instances, ERAs may involve "spending a penny today to save a dollar tomorrow." ERAs may prevent spreading or exacerbation of contamination by containing or removing the source of contamination or may prevent the loss of water supply. In other instances, ERAs may address a current risk to human health, welfare and the environment that cannot or should not go unaddressed until a final remedy is developed. ERAs may be relatively inexpensive short-term actions, such as fencing or providing bottled water, or they may involve an expensive large-scale groundwater treatment system.

##### *Interim Remedial Actions*

Interim remedial actions (IRAs) are actions taken or funded by the Department to address the loss or reduction of available water from a well on the site. An IRA may be used in those cases where a person affected by contamina-

tion or potential contamination of a well wants to apply for funds or to have the Department undertake action to address the well before adequate information exists to make decisions regarding the cleanup. If the Department later determines that the IRA was not necessary or that the party requesting the action is responsible for the contamination of the well, the requesting party must reimburse the Department. IRAs must be the minimum necessary to address the loss or reduction of available water from the well.

#### Record of Decision

The record of decision documents the selected remedy for a site. The record of decision includes an estimated cost, time-frames for beginning and completing the cleanup process, and a demonstration that the selected remedy meets the remedial objectives.

#### Design, Implementation, Operation and Maintenance of the Early Response Action or Remedy

The design and implementation stage includes the development of the engineered design of the selected remedy and implementation of the remedy through construction. A period of operation and maintenance may follow the design and construction activities.

#### Requests for a No Further Action Determination

After a site is cleaned up, a person may request a determination that a site or a portion of a site requires no further action. A no further action determination precludes the Department from conducting further remedial action at the site or portion of the site covered by the request. The Department retains access to the site and may reopen investigation of the site or require additional remedial action under certain circumstances.

After determining that the information is sufficient to take action, the Department publishes notice of the request and accepts public comment. After the close of the comment period, the Department provides notice of its decision to the requesting party and to any commenters. No further action determinations are published in the registry.

#### The Allocation Process

If the Department determines that cost recovery may be appropriate, the Department notifies each potentially responsible party of the basis for liability, a detailed accounting of the method, and results of the allocation and the party's percentage share of the cost. The notification includes an offer to settle the party's liability based upon an agreement to pay 75 percent of the share of the costs allocated to that person. If a responsible party chooses not to settle, the process continues through the selection of an allocator and into the allocation hearing process. The allocation hearing proceeds under procedures established in the WQARF statute and results in the issuance, by the allocator, of an allocation report identifying liable parties and their proportionate shares of liability. The allocator's findings regarding liability and the proportionate shares of liability may be appealed in superior court.

The statutory provisions governing the allocation process are sufficiently specific that no rules regarding the allocation process have been promulgated or are included in today's rulemaking.

#### Settlements

The WQARF process encourages prompt settlements as an alternative to litigation. The Department will consider offers by potentially liable parties to settle their liability to the state under both state and federal law. All settlements require an opportunity for public comment and, in cases where contribution protection is requested, settlements require court approval.

The statute specifically authorizes qualified business settlements and financial hardship settlements in cases where responsible parties cannot afford to pay their full share of cleanup costs. Qualified business settlements provide a quick, efficient, and affordable means for businesses with gross incomes of 2 million dollars or less to resolve their potential WQARF liability. Financial hardship settlements allow any person to settle its potential WQARF liability if that person can demonstrate a financial hardship. Financial hardship settlements are designed to help those parties who are unable to pay their allocated share of liability without going out of business.

The statutory provisions governing qualified business settlements and financial hardship settlements sufficiently specific that no rules regarding the WQARF site registry have been promulgated or are included in this rulemaking

#### F. Specific Section by Section Explanation of Today's Interim Rulemaking:

The Section by Section explanation of the rules is as follows:

#### **R18-16-201 and R18-16-202. Preliminary Investigations and Site Scoring**

##### **R18-16-201. Preliminary Investigations**

The preliminary investigation (PI) process begins with information about a release or a potential release of a hazardous substance to soil or water. This information may come from a citizen complaint, investigations conducted by others, or from investigations conducted by a regulatory program within the Department. The Department conducts a screening process to determine if the information is credible, if another regulatory program has jurisdiction, or if the site is already being cleaned up by a party voluntarily. If it appears that a release has occurred or may occur and WQARF is the appropriate program, the Department initiates a PI. If not, the Department either terminates the investigation or refers the site to another Departmental program.

The purpose of the PI is to determine if a release has occurred or may occur and, if so, to determine the potential risk to public health, welfare, and the environment so that the site can be scored and placed on the registry. The PI is not a complete investigation to determine the extent of the contamination nor is its purpose to determine those responsible for the contamination. The PI is limited to gathering only enough information to confirm that a release has occurred or may occur and whether further investigation or action is necessary.

If it is determined in the course of a preliminary investigation that a release has not occurred or is not likely to occur, the Department terminates the PI. Likewise, if it is determined that a release has occurred, but the release or threatened release is below regulatory standards, the Department terminates the PI. For a release to soils, this means that the soil remediation standards rule (18 A.A.C. 7, Article 2) has been met, including all conditions necessary for approval such as a demonstration of leachability to groundwater. For a release to water, this means that the water quality standards (18 A.A.C. 11) have been met or if there is no standard, a risk level approved by the Department.

The PI is designed to collect information necessary to score the site using the eligibility and evaluation model. The information should be based on existing information if it is available and is valid. If additional information is necessary to score a site, a work plan must be developed to collect the information. The work plan must include some basic information and a description of how available records will be searched, including a requirement to obtain information from water providers. If sampling is necessary, the work plan must include additional information including a conceptual site model. The conceptual site model focuses the sampling efforts and ensures that all necessary information is collected.

After the PI is completed, a report is prepared describing the results of the investigation. The Department reviews the report and determines whether the release is below the regulatory standards or risk levels described above. For releases below regulatory standards, no additional investigation or action is necessary and the site is dropped from further consideration. For releases above the regulatory standards, the site is scored using the eligibility and evaluation model and a draft registry report is prepared.

This rule also provides for a person other than the Department to conduct a PI. The person must submit a request to the Department with the required information and enter into a written agreement with the Department.

#### **R18-16-202. Site Scoring**

This rule adopts the eligibility and evaluation site scoring model. Session law from Laws 1997, Chapter 287, requires the Department to adopt the eligibility and evaluation site scoring model to score a WQARF site for placement on the registry. The placement of a site on the registry indicates that further investigation or action is necessary.

The eligibility and evaluation site scoring model was developed by the Site Prioritization Subcommittee of the Groundwater Cleanup Task Force in 1996 to evaluate the actual and potential risk to public health, welfare, and the environment from a release or threat of a release of a hazardous substance. The model provides a quantitative section to evaluate risk by assessing the actual and potential contaminant exposure to public health and the environment resulting from a release or threat of a release of a hazardous substance. The point total is determined using the following weighted factors: release event (10 points); site and contaminant characteristics (30 points); human exposure routes (65 points); and environmental factors (15 points). The largest number of points in the human exposure section is assigned to the groundwater pathway. Within each pathway, actual exposure is given more points than potential exposure. As a result, sites with groundwater contamination and those with contamination of multiple media typically score the highest.

The scoring of a site does not necessarily mean that the site poses a risk to human health, welfare, and the environment. It means that the site has or may have contamination above a regulatory standard and further investigation is necessary to determine the appropriate action. There is no threshold score for placement on the registry.

The model also contains a qualitative section dealing with "other factors." The Department will prepare a narrative on these factors to help determine the priority for assignment of staff resources and WQARF funding to a particular site.

#### **R18-16-301 and R18-16-302. Public Information**

This Article was originally published in a Notice of Proposed Exempt Rulemaking in 5 A.A.R. 256, January 22, 1999 (see also, the Notice of Public Information in 5 A.A.R. 506, February 12, 1999). As required under the session law, the Department provided 60 days after publication for public comment. No public comments were received. The rule was reviewed by the Attorney General as authorized under A.R.S. § 41-1044, but was not approved and, thus, never became effective. Proposed Article 3 has been withdrawn. A Notice of Public Information announcing the withdrawal of the previously proposed Article 3 was published at 6 A.A.R 3122, August 18, 2000.

Article 3 was previously published under the title "Community Involvement". Community involvement, however, is a broad concept and is an integral part of the WQARF program, most notably of the remedy selection process set out in Article 4. Article 3 governs only the provision of notice to the public, the provision of opportunities for public comment and the location of information repositories maintained by the Department or others as a part of the



WQARF program. Article 3, as published today, is entitled “Public Information.” This new title reduces the potential for confusion.

**R18-16-301. Public Notification and Opportunities for Public Comment**

This Section applies to the Department and to others providing the public with notice of and an opportunity to comment on activities taking place on a WQARF site. The WQARF program is self-implementing and is intended to encourage remedial actions by parties other than the Department. These parties may assume responsibility for community involvement activities, including the provision of notice and opportunities to comment. This rule establishes a single set of standards applicable to the Department and to others involved in the community involvement process.

R18-16-301 sets default standards for the provision of notice and opportunities to comment. If A.R.S. Title 49, Chapter 2, Article 5 or a community involvement plan requires notification of the public or provision of an opportunity to comment, the terms of the statute govern the form and frequency of the notification and the duration of the comment period. If the statute does not specify form, frequency, or duration, the terms of the community involvement plan control, but only to the extent that the requirements of the community involvement plan meet or exceed the requirements of rule. If neither the statute nor the community involvement plan specify form, frequency or duration, this rule establishes the standards.

R18-16-301(D) is intended to promote timely remedial actions in situations that present an immediate danger to public health, public welfare or the environment.

**R18-16-302. Location of Information Repositories**

R18-16-302 has been retitled “Location of Information Repositories” and is narrower in scope than the previously published rule. R18-16-302 no longer governs the contents of information repositories. Content requirements for information repositories now appear in R18-16-404. The former R18-16-302(C), governing the location of information repositories, is now the exclusive subject of the rule. Under R18-16-302, as published today, public information repositories are located at either an office of the Department or at another facility. Public information repositories located at a facility other than a Department office must provide reasonable access that is substantially equivalent to the access to the public information repository that is provided by the Department.

**R18-16-401 through R18-16-416 Remedy Selection**

The scope of these rules extends from the investigation of a site on the registry through the completion of the cleanup, including community involvement activities. The process for selecting a remedy in this rule is significantly different than is used by the Environmental Protection Agency (EPA) at superfund sites. This rule allows increased flexibility in the selection of groundwater remedies and is designed to protect and provide for uses of land and water. EPA focuses on setting the goal within the aquifer and requires the aquifer to be restored to that goal. EPA also conducts a remedial investigation and a feasibility study, selects a proposed remedy, and requests public comment on the proposed remedy. This rule has active community involvement from the beginning to the end of the process until the site is cleaned up. Finally, this rule was written to be self-implementing and encourages others to do the work and get credit toward their potential liability for the work that they have done.

**R18-16-401. Definitions**

Terms with specific application to the remedy selection rules are found in R18-16-401.

**R18-16-402. Applicability**

This Section limits the applicability of the remedy selection rules. The remedy selection rules apply only to sites which have been scored and listed on the registry or as otherwise made applicable by law. Sites on the registry are those which the Department has identified as needing additional investigation or action under the WQARF program.

The remedy selection rules address only the impacts of a release or a threatened release of a hazardous substance. WQARF will not cover remedial action costs that would have been incurred if the release had not impacted the property or well. For example, a well may have high levels of trichloroethylene, arsenic, and total dissolved solids. If only the trichloroethylene was released and the other contaminants were present before the release, the well owner cannot require WQARF to clean up the remainder of the contaminants or replace the well with a more productive well. Likewise, a property owner who owns a landfill cannot require WQARF to remove or completely clean up a landfill so the property can be used for other uses. However, in these examples, the property owner, well owner, or water provider would not be required to reimburse the WQARF fund if coincidental benefits, such as the removal of additional contaminants, occurred as a result of the remedial action.

This rule also provides a process to transition sites being cleaned up under “old WQARF” to “new WQARF.” Transition sites are sites that are listed on the registry where some remedial action has occurred prior to the effective date of these rules. The requirements for transition sites depends on the level of approval received for work conducted and how far the site is towards implementing the cleanup. A person conducting work after the effective date of the rule is required to follow the rule.

This Section provides a process for a person who performed remedial work at a transition site prior to the effective date of this rule to obtain the Department's approval of the work. The person requesting the approval must describe the remedial action, demonstrate that the work is reasonable and necessary, and demonstrate that the work meets the applicable purposes of the remedy selection rules. The purpose of a remedial investigation, feasibility study, and an early response action are specifically stated in the section dealing with that action. This allows the Department to approve remedial actions that did not follow the requirements to the letter, but achieved the goal of the rules. Any remedial work performed after the approval must comply with the requirements of this Article.

Remedial investigations and feasibility studies performed prior to the effective date of this rule present a special situation. No remedial investigation and feasibility study will be approved until information regarding current and reasonably foreseeable uses is collected, a draft RI report is prepared and distributed, and remedial objectives are selected and reported as described in R18-16-406. In addition, any alternative remedies evaluated in the feasibility study must be modified as necessary so that the remedies meet remedial objectives. Thereafter, the remedy selection rules will apply to any remedy selected.

Finally, this rule defines the application of the remedy selection rules to sites where cleanups are underway subject to approvals, agreements or court orders that predate the effective date of this rule. If, prior to the effective date of this rule, the Department approved a remedial action plan or entered into a written agreement that includes the implementation of a remedy or the substantial equivalent of a remedy, the approval or agreement apply. It does not make sense nor is it equitable to stop a remedy underway and apply a new process. In addition, this Article does not apply to work governed by the terms and conditions of a court decree or judgement entered into prior to the effective date.

**R18-16-403. Scope of Work, Fact Sheet, Outline of the Community Involvement Plan, and Notification of Availability**

This Section addresses community involvement and notice requirements that take effect if the Department begins to conduct work at a site. Unless the Department determines that the necessary remedy at a site can be completed within 180 days, ADEQ prepares a scope of work for the remedial investigation and the feasibility study, a fact sheet, and an outline of the community involvement plan. These documents must be prepared before the Department conducts a remedial investigation and feasibility study.

The scope of work for a remedial investigation is meant to provide a broad overview of the extent of the investigation. The scope of work for a feasibility study generally describes the process for conducting the feasibility study and may specify additional work to be performed. The fact sheet includes general information about the site including known contamination, the site's score, potential risk of and routes of exposure to the contaminants at the site, and Department personnel who may be contacted for further information regarding the site. The outline of a community involvement plan lists the activities which will be included in the community involvement plan.

The Department provides written notice to each potentially responsible party of the availability of the scope of work, the fact sheet, and the outline of the community involvement plan. The notice also contains a statement that any person may, by written agreement with the Department, develop and implement the remedial investigation and feasibility study work plans.

This notice is also published in a newspaper and provides an opportunity for a public meeting to discuss the documents. In addition, a written notice is provided to residents, owners or operators of facilities being investigated, commercial occupants, water providers, and owners of wells within the community involvement area. A responsiveness summary is prepared addressing any public comments received on the scope of work.

**R18-16-404. Community Involvement Requirements**

Unless the Department determines that the necessary remedy at a site can be completed within 180 days, the Department prepares and implements the community involvement plan prior to initiating a remedial investigation and feasibility study work plan. The community involvement plan includes all of the activities specified in the community involvement plan outline and specifies: 1) how the activities should be carried out; 2) who should be involved; and 3) when the activities should take place. The plan provides information regarding the establishment of a selection committee and community advisory board and provides for notices and notifications at critical junctures from the investigation of the site through the completion of the remedy. The plan also provides for the distribution of public information, such as newsletters, and identifies the locations and types of information which will be contained in a public document repository.

The community involvement plan is tailored to each site in order to provide the most effective means of providing information to and obtaining comments from the community. The Department conducts a community profile to obtain specific information, such as appropriate languages and meeting locations. The Department also solicits comments and conducts interviews with community leaders, interested groups, and others to determine community concerns and issues. In addition, the Department evaluates public health and environmental impacts. The plan is updated annually with input from the community advisory board.

Often parties wish to conduct work at a site or a portion of a site before the Department initiates the work. In these instances, the Department has not yet allocated resources to the site, including implementing the extensive community involvement requirements described in the previous Section. This Section describes an alternate community

involvement process that allows other parties to perform work without having to wait for ADEQ to allocate resources to the site.

After the Department has provided notice under A.R.S. § 49-287.03, another party can conduct community involvement activities only by written agreement with the Department. This notice, described in the previous Section, signifies that the Department is ready to conduct work at a site. A written agreement prevents a duplication of efforts and minimizes confusion.

Parties who conduct work at a site must comply with the community involvement plan if one has prepared or adopted by the Department. If no community involvement plan has been prepared, a party may develop a plan for approval and adoption by the Department or they may conduct community involvement activities that are appropriate to the scope and schedule of the work performed.

The rule specifies minimum requirements for conducting community involvement activities without a community involvement plan. Notice must be provided to potentially impacted people when field work will cause a disruption (i.e., noise, light, odor, and dust) or when contaminants are removed. For remedial actions that will take more than 180 days, notice must be provided to persons within the community involvement area and other interested persons and a repository must be established where information about the site can be reviewed by the public. A public meeting must be convened prior to the close of the public comment period to provide information concerning a proposed remedial action plan prepared under R18-16-408. Any specific public notice and comment and consultation requirements under this Article, such as meetings to establish remedial objectives, must be met. General notice and public notice requirements are also provided.

#### **R18-16-405. Early Response Actions**

Early response actions (ERA) are certain remedial actions initiated by the Department or any person prior to selection of a remedy at a site. In many instances, ERAs may involve “spending a penny today to save a dollar tomorrow”. ERAs may prevent spreading or worsening of contamination by containing or removing the source of contamination. ERAs may prevent the loss of water supply. In other instances, ERAs may address a current risk to human health, welfare and the environment that cannot or should not go unaddressed until a final remedy is developed. ERAs may be relatively inexpensive short-term actions, such as fencing or providing bottled water, or they may involve expensive large-scale groundwater treatment system.

An ERA is not intended to replace the process for selecting a remedy. Depending on when the ERA is initiated, information about the site may be relatively limited. As the remedy selection process progresses, the ERA may be modified or incorporated into the remedy. In any case, the remedy must be selected using the process established in R18-16-406 through R18-16-410.

The method or technology used to implement the early response action is selected based upon best professional judgment considering several factors using the best available information. A written rationale must be prepared describing why the ERA is necessary and how it was selected. It is not required to collect all the information necessary to select a final remedy (e.g., conducting a remedial investigation and a feasibility study) to conduct an ERA. A work plan must also be prepared containing several elements including community involvement activities.

A person conducting an ERA must notify the Department, in writing, of the action. If the Department has issued the A.R.S. § 49-287.03 notice signifying the beginning of the remedial investigation, the ERA notice must be provided to the Department 15 days before the ERA begins. If the Department has not issued the notice, the ERA must be provided 15 days after the Department issues the notice. After notice of a proposed remedial action plan has been given, an ERA may be initiated only with Department approval.

If immediate action is necessary to address a current risk to public health or the environment, to protect a source of water, or to provide a supply of water, the work plan and written rationale may be prepared and the community involvement activities may be conducted after commencement of the early response action. In addition, the notice to the Department can be provided as soon as practicable. In these instances where time is of the essence, the preparation of the documentation and the time that it takes to conduct community involvement activities and provide notice may make the difference in taking the appropriate ERA before it is too late.

This rule also provides a process for a person to obtain an approval of an ERA or a work plan to conduct an ERA. The Department shall approve the work plan or early response action if it complies with the requirements of this Section and any other applicable requirements of this Article. Additional presumptions for considering whether an early response action is necessary to protect or provide a supply of water is also provided.

#### **R18-16-406. Remedial Investigations**

A remedial investigation (RI) is conducted to assess the conditions at a site or portion of a site and to collect enough information about uses of land and water to determine the appropriate cleanup action. The Department or any person may perform all or any portion of a remedial investigation. However, after the Department has issued the A.R.S. § 49-287.03 notice signifying the beginning of the RI, a person may perform such work only under a written agreement with the Department. A party performing all or a portion of a remedial investigation may obtain Department approval of its work.

A work plan must be developed and implemented for all or any portion of a remedial investigation for a site or a portion of the site. The work plan must demonstrate that the work performed will meet the requirements set out in the rule and will be performed in accordance with guidance documents or standards that are commonly accepted in the scientific community. Each work plan must contain several required elements and may be modified as work proceeds to address unknown or changed conditions or access problems. Field investigations can be implemented in different stages to assess several required factors in order to focus the sampling and maximize the efficiency of the investigation. Before implementing a work plan for a remedial investigation, the Department must be notified in writing with the name and address of the working party and a general description of the work to be performed.

In some instances, a risk evaluation may be conducted as part of the information collection stage to determine the current risk to public health and the environment from contaminants at the site. This is a significant departure from remedial investigations conducted by the Environmental Protection Agency (EPA) at federal superfund sites. EPA conducts a baseline risk assessment to determine if further action is warranted at a site based on an evaluation of current and future risks. Under the remedy selection process described in this rulemaking, a risk assessment is only conducted to determine risks of current exposure.

Aside from determining the extent of the contamination, the most critical component of the RI and of the whole remedy selection process is the establishment of remedial objectives. The remedy selection process revolves around the remedial objectives and the selected remedy must meet the remedial objectives. The remedial objectives are based on uses of land and water and are designed to protect and provide for uses of land and water.

In order to establish remedial objectives, information is collected regarding the present and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be affected by a release of a hazardous substance. Reasonably foreseeable uses are those likely to occur based on information provided by water providers, well owners, land owners, government agencies, and others.

For remedial objectives used to select a soil remedy, the land owner determines the type of land use in accordance with A.R.S. § 49-152 and 18 A.A.C. 7, Article 2 (the soil remediation standards rule). The soil remediation standards rule provides for a property owner to cleanup contaminated soil to a level consistent with its use. If the property will be used for residential purposes, the property must be cleaned up to residential levels. If the property will only be used for non-residential purposes, the property owner can remediate the property to non-residential levels as long as they agree to limit the use of their property and record a restrictive use covenant on the property deed.

For landfill or other similar sites, the land owner may establish the reasonably foreseeable uses of its land. However, the remedial objectives for these types of sites are not required to address anything other than the current or potential exposure to hazardous substances at or from the site. This means that a land owner cannot require that the landfill be made suitable for other purposes under WQARF, such as stabilizing the landfill to support structures. The owner also cannot require that the remedy remove landfill or other soil material. If the land owner indicates that they would like to make the site suitable for other uses, the desired use can be incorporated into the remedy, but the land owner must incur any costs beyond addressing the current or potential exposure to hazardous substances at or from the site.

For surface water or groundwater, uses likely to occur within one hundred years will be evaluated unless site-specific information suggests a longer time period is more appropriate. Due to the importance of meeting the needs of the water users, the rule requires water affected providers to be consulted when collecting information concerning water uses and water management plans to be taken into account. These plans consider growth, water availability, and emergency supplies or drought conditions.

After the extent of contamination and the uses of land and waters are determined, a draft remedial investigation report is prepared that summarizes the data and information collected. The report is provided to the community advisory board, affected water providers, and government agencies. The report is also made available as provided under the community involvement plan. Notice is also given to the public of the opportunity to review and comment on the report.

If the remedy will only address soils or will only address other sites where waters of the state have not been impacted, a final remedial investigation report is prepared containing the results of the site characterization and a listing of remedial objectives. The report must be accompanied by responsiveness summaries from comments received on the draft remedial investigation report. If the Department approves the report, the report may be used to select a remedy in R18-16-407(C) or R18-7-407(D).

If the remedy will address waters of the state, the Department holds one or more public meetings to discuss contamination found at the site and to determine the remedial objectives. By the time the first meeting is held, numerous community involvement activities have already taken place under the community involvement plan required in R18-16-404. Land owners, local governments, affected water providers, and the public should already be aware of the conditions at the site and many people have been contacted regarding the uses of land and water as part of the collection of information. At these meetings, the Department and interested parties discuss proposed remedial objectives for each use in terms of: 1) what it would take to protect a use; 2) what it would take to restore, replace, or provide for a use impaired or threatened to be impaired; 3) when action is needed to protect against or provide for the use; and 4) how long action is needed to protect or provide for the use. The Department also may receive and consider written information regarding proposed remedial objectives.

After the meeting the Department prepares a report of the proposed remedial objectives. The remedial objectives must be generally consistent with the water management plans of water providers and general land use plans established by local land use jurisdictions. The Department considers public comments on the proposed remedial objectives and holds additional public meetings depending upon the level of public interest.

The Department then prepares a final remedial investigation report containing the results of the site characterization and the final report of the remedial objectives. The reports are accompanied by responsiveness summaries comments, issues and concerns raised in the community involvement process. After completion of the remedial objectives report, any changes to the remedial objectives must be made according to the process described above.

This process for establishing remedial objectives for a site is quite different than the process that was previously used in the WQARF program and is still used by EPA at federal superfund sites. Previously, the remedial objectives were established by the Department and focused on setting cleanup levels within the aquifer or surface water. In addition, uses that were already damaged due to the contamination were not necessarily addressed by the cleanup and uses that were threatened by the contamination may not have been addressed in the time needed.

Remedial objectives described in this rule are based on uses determined by the community and are refined by the Department with significant community involvement. The objectives are designed to protect and provide for uses of land and water. This does not mean that the aquifer will be always be cleaned up to drinking water standards or to a level suitable for the use. Instead, the rule requires different uses to be identified and a remedy is selected which will protect and provide for the uses.

#### **R18-16-407. Feasibility Study**

Using the information collected during the remedial investigation, a feasibility study (FS) is conducted to identify proposed remedies that may be capable of achieving remedial objectives and to select a preferred remedy from among them which: 1) assures the protection of public health, welfare, and the environment; 2) to the extent practicable, provides for the control, management, or cleanup of hazardous substances so as to allow for the maximum beneficial use of waters of the state; 3) is reasonable, necessary, cost-effective, and technically feasible; and 4) addresses any well that either supplies water for municipal, domestic, industrial, irrigation or agricultural uses or is part of a public water system, if the well would now or in the reasonably foreseeable future produce water that would not be fit for its current or reasonably foreseeable end use without treatment.

The Department or any person may perform all or any portion of a feasibility study. However, after the Department has issued the notice required in A.R.S. § 49-287.03, a person may perform work only under a written agreement with the Department. The rule provides a process for a person to obtain approval of a work plan or a report for all or any portion of a feasibility study.

A work plan must be developed and implemented for all or any portion of an FS. The work plan must demonstrate that the work performed will meet all the requirements set out in the rule. The feasibility study process is subject to all appropriate community involvement requirements. Before implementing a work plan for a feasibility study, the Department must be notified in writing with the name and address of the working party and a general description of the work to be performed.

FS requirements vary depending on whether the subject of the remediation is soils, landfills that do not or will not impact groundwater, or water. Remediation of soils and landfills that do not or will not impact groundwater does not require an analysis of alternative remedies. Presumptive remedies exist for most of these types of cleanups and the range of methods and technologies is usually limited. An FS report is prepared describing how the proposed remedy meets the soil remediation standards rule (A.A.C. R18-7-201 et seq.), or similar standards for landfills. The report describes why the proposed remedy is appropriate considering available remedial methods, technologies, and the comparison criteria of risk, cost, practicability, and benefit.

For affected or threatened waters of the state, a reference remedy and at least 2 alternative remedies, each of which is capable of achieving remedial objectives, are developed. The reference remedy and each alternative remedy consists of a package, or combination, of remedial strategies and measures. A strategy is one of 6 listed general remediation approaches employed to address contamination. Measures are specific actions taken to address land or water uses, such as replacement of a well or well-head treatment. Measures taken to address contaminated or threatened wells must be identified in consultation with water providers or well owners to ensure the action taken meets their water use needs. Because remedial measures do not address the contamination itself, financial mechanisms, such as trust funds or bonds, may be required to provide for the continued cost of implementation. The reference remedy and any alternative remedy also may include contingent strategies or measures to address reasonable uncertainties regarding the achievement of remedial objectives or uncertain time-frames in which remedial objectives will be achieved.

The reference remedy is developed using best professional judgement considering available remedial methods, technologies, and the comparison criteria of practicability, cost, risk, and benefit. The alternative remedies are developed for comparison with the reference remedy. At least one of the alternatives must contain a remedial strategy or combination of remedial strategies that is more aggressive than the reference remedy and at least one must contain a remedial strategy or combination of remedial strategies that is less aggressive than the reference remedy. A more aggressive strategy may require fewer remedial measures to achieve remedial objectives, a strategy that

permanently achieves remedial objectives in a shorter period of time, or a strategy that is more certain in the long-term and requires fewer contingencies.

The reference remedy and the alternative remedies are then compared to each other based on practicability, cost, risk, and benefit. Specific requirements for the evaluation of each comparison criteria is provided. Based upon this comparison, a proposed remedy is developed. The proposed remedy may be the reference remedy, any of the other alternative remedies evaluated in the feasibility study, or a different combination of remedial strategies and remedial measures that were evaluated in the FS.

The process and reasons for selecting a proposed remedy are described in an FS report. The FS report describes how the reference remedy and alternative remedies were chosen, including a demonstration that they meet remedial objectives and an evaluation of their consistency with water management plans and general land use plans. It also includes a description of the reasons for selecting the proposed remedy, including: 1) how the proposed remedy meets the remedial objectives; and 2) how the comparison criteria were considered; and 3) how the proposed remedy meets the requirements of A.R.S. § 49-282.06.

This FS process is different than the process that was previously used in the WQARF program and is still used by EPA at federal superfund sites. Previously, the Department evaluated numerous alternatives from no action to the most aggressive remedy for every site, regardless of the remedial objectives for the site. In addition, due to the difference in selecting remedial objectives, the proposed remedy did not always address uses that were impaired or threatened to be impaired in the time needed. This rule minimizes the development and evaluation of remedies which will not meet the remedial objectives and the preferred remedy must meet the remedial objectives.

#### **R18-16-408. Proposed Remedial Action Plan**

The proposed remedial action plan (PRAP) informs the public and potentially responsible parties of the proposed remedy. The PRAP describes the site, the results of the remedial investigation and the feasibility study, and the proposed remedy identified in the feasibility study and its estimated costs. In addition, the plan describes how the proposed remedy will meet each of the remedial objectives identified in the remedial investigation report, how accomplishment of the remedial objectives is to be measured, and any recharge, discharge, transportation and uses of remediated water. Notice of the PRAP and of the opportunity to comment is provided by the Department as required under the community involvement plan.

If the Department intends to seek recovery of costs and conduct a cost allocation proceeding, the PRAP is provided to each potentially responsible party and additional notice is provided to them regarding allocation methods, a preliminary list of potentially responsible parties, and of the opportunity to submit information regarding other potentially responsible parties. In addition, the notice to potentially responsible parties includes a statement of costs incurred by the Department prior to the date of the notice, projected future costs, and information regarding the opportunities to submit costs, object to costs, or respond to objections to costs.

The rule also provides a process for a person to prepare a proposed remedial action plan. Notice requirements vary depending on whether the Department will be seeking cost recovery.

#### **R18-16-409. Remedial Action Costs Credit**

This Section provides a process for parties to obtain credit against their share of potential liability at a site. This means that the Department can deduct the amount spent on remedial actions by responsible parties from their allocated share of the costs of the remedy if the costs are approved by the Department. However, this rule does not create a right of reimbursement from the WQARF fund for any costs incurred or to be incurred at a site if a party spent more on remedial actions than their allocated share of cost of the remedy.

The person seeking the credit must submit an itemized statements of costs incurred or to be incurred for remedial actions undertaken at the site to the Department. They must also submit documentation that the costs are consistent with A.R.S. § 49-282.06 and this Article. If the remedial actions have not been previously approved by the Department, the person must also request approval of the remedial actions under R18-16-413. The statements are made available for review and an opportunity is provided for the Department or any person to object to the costs. The person submitting the costs also has an opportunity to respond to the objections.

Any person who requests approval of costs must reimburse the Department for the total reasonable cost to the Department for performance of the review unless the Department waives all or a part of the reimbursement. An agreement to reimburse the Department must be submitted with an itemized statement of costs. Costs that are reimbursed to the Department constitute remedial action costs that may be recovered from other responsible parties.

The Department evaluates the costs and objections and approves those costs determined to be in substantial compliance with the requirements under A.R.S. § 49-282.06. Credit is given only for recoverable costs. Credit given by the Department as part of a settlement for work performed is considered a cost incurred by the Department and is included as an approved cost in the record of decision. The Department prepares a list of the approved costs for inclusion as part of the total estimated costs of the remedy in the record of decision.

This process is the only way for a party to obtain approval of their remedial action costs. Departmental approval of remedial actions are not considered approval of the costs of the remedial actions.

**R18-16-410. Record of Decision**

After receiving comments on the proposed remedial action plan and any information from potentially responsible parties, a record of decision (ROD) is prepared. The ROD documents the cleanup chosen for the site. The rule provides a process for any person to prepare the ROD. However, only the Department may issue the record of decision. This Section also contains a list of elements required to be in all RODs.

Notice of the availability of the ROD is provided to each person who commented on the proposed remedial action plan and in accordance with the community involvement plan or requirements in R18-16-404. The ROD may be amended following notification and public comment.

**R18-16-411. Design, Implementation, Operation and Maintenance of the Early Response Action or Remedy**

The design and implementation stage includes the development of the engineered design of the selected remedy and implementation of the remedy through construction. The design and implementation of the remedy must conform with the remedial action plan as adopted in the record of decision.

If the remedy or an early response action includes well replacement or a provision for an alternative water supply, the Department or any person conducting the design must consult with the affected well owner or water provider. Specific design requirements are provided for well owners and water providers to ensure that their needs and legal requirements are met without causing significant alteration of their systems.

The design of any water treatment facilities as part of the remedy or an early response action must be approved by the Department before construction. The design must be based on an evaluation of potential treatment system failure that could affect public health and must incorporate safeguards including any site-specific engineering and operation controls necessary to assure protection of public health against such failure. Minimum safeguard requirements are listed.

A period of operation and maintenance of a remedy may follow the design and construction activities. If operation and maintenance are necessary to ensure the continued achievement of the remedial objectives, an operation and maintenance plan must be prepared and implemented.

The Department's approval of an operations and maintenance plan is required for each site where the remedy or an early response action involves treatment of water to remove contaminants of concern at the site. The community advisory board, if one has been established for the site, must be provided with the opportunity to comment on the operations and maintenance plan. Notice and public involvement are conducted in accordance with R18-16-404. Requirements for the operations and maintenance plan are listed.

Any person may implement all or any portion of a remedy with the Department's approval. A process is provided to obtain the Department's approval of the design for other portions of a remedy. However, a well owner or water provider whose water use is being addressed may, in its sole discretion, elect to construct, operate, or construct and operate the water treatment, well replacement or alternative water supply component of the remedy or early response action which is designed to address its use. Well owners and water providers may want to have control over these activities to ensure that the users needs are being met and to ensure that all applicable laws governing drinking water are met. If the well owner or water provider elects to do so, they must enter into a written agreement with the appropriate person that will govern the terms of the construction, operation or construction and operation of the water treatment, well replacement or alternative water supply component of the remedy. This election does not alter the responsibility of the Department or any person under WQARF to fund all or a portion of the remedy or early response action.

**R18-16-412. Innovative Technologies**

This Section deals with approvals and incentives for innovative technologies used to characterize and clean up a site. The Department may approve the use of an innovative technology for a site if the technology has been demonstrated to be reasonably likely to achieve its objectives and meets the other criteria set forth in this Article. Innovative does not mean unproven. It means one that has been used in the field, but is not yet considered routinely for use.

If an innovative technology is approved as part of a remedy, the remedial action plan shall provide for a contingency in the event that the technology fails to meet its objectives. The Department may use monies from the WQARF fund to contract for outside review of the technology.

Because innovative technologies may reduce the cost of the cleanup or accelerate the cleanup schedule, the Department may provide incentives to encourage their use. The Department may use monies from the WQARF fund to finance some or all of the use of an innovative technology. In addition, the Department may agree to forego penalties or other sanctions regarding a delay caused by the use of innovative technologies under certain defined circumstances.

**R18-16-413. Approval of Remedial Actions Under A.R.S. § 49-285(B)**

This Section describes the process for a person who performs work at a site or a portion of a site to obtain the Department's approval of the work for purposes of cost recovery. This approval is only for the work performed or to be performed, not for the costs of conducting that work. The only process to obtain the Department's approval of

costs is through the process adopted under R18-16-409. The Department's approval under this Section is not required to preserve any right to recover remedial action costs under A.R.S. § 49-285.

The Department previously proposed two options regarding the availability of approvals under this Section and sought comments on both options. Option 1 limited approvals to remedial actions at WQARF registry sites. Option 2 provided for the universe of potential A.R.S. § 49-285(B) approvals including remedial actions at WQARF registry sites, remedial actions conducted in the voluntary remediation program, and remedial actions conducted at other sites. For reasons discussed in the summary of the principal comments and the agency responses in Section 11 of this Preamble, the Department selected option 1, limiting the availability of approvals under this Section to sites on the WQARF registry.

A person seeking approval for a remedial action must submit a written request to the Department. The request must include: 1) general information about the person making the request and the site; 2) a description of any known contamination at the site; 3) a description of remedial actions already performed and a work plan for any remedial action yet to be performed; 4) a proposal for public notice and comment on the request including a list of names, addresses, and a summary of persons whom the person making the request believes to be responsible parties; and 5) an agreement to grant access to the Department and to reimburse the Department for the total reasonable cost of the review of the remedial action, including costs of notices. The person making the request must demonstrate how the remedial action is or will comply with the requirements of this Article.

The Department may approve, deny, request additional information, request modifications, or may condition its approval of a remedial action on modifications necessary to meet the applicable requirements of this Article. Before the Department approves the request, the Department must provide notice and an opportunity to comment on the request for approval.

#### **R18-16-414. Determination of No Further Action**

This Section identifies when no further action is necessary at a site or a portion of a site and describes the process to obtain the determination from the Department. The determination can be for soils, groundwater, or both soils and groundwater.

Any person may submit a written request to the Department for a determination that the site or a portion of the site requires no further action. The request must include information sufficient for the Department to make the determination including the specific hazardous substances for which the determination is sought and a geographical description of the site or portion of the site. A request for a no further action determination may only be made once per year.

The Department may request additional information from the requesting party before acting on the request. A.R.S. § 49-287.01(F) specifies time-frames for the Department to request the information and for the requesting party to provide the information, and provides other requirements regarding the additional information. In addition, to requesting information, the Department may conduct an investigation of the site or portion of the site. The requesting party must provide access to the site. After the Department determines that it has sufficient information to act on the request, notice of the request is published and an opportunity for comments is provided.

After considering the information and any public comments, the Department must make a decision on the request within 300 days after receiving the request. A determination will be made that no further action is necessary for soils if the soil remediation standards rule (18 A.A.C. 7, Article 2) has been met, including all conditions necessary for approval such as a demonstration of leachability to groundwater. A determination will be made that no further action is necessary for groundwater if no hazardous substances at the site or a portion of the site have impacted or will impact groundwater. A determination will be made that no further action is necessary for waters of the state if: 1) the site or portion of a site has been remediated under program other than WQARF; 2) the groundwater impacted by a release from the site does not and will not exceed water quality standards or if there is no water quality standard, a risk level approved by the Department to protect public health, welfare, and the environment; or 3) there is no present or reasonably foreseeable use of water that would be impaired by the release, as determined by information collected under R18-16-406. A determination of no further action for a site or a portion of a site is published in the registry.

A determination of no further action means that the Department cannot conduct or require further remedial actions for the specific hazardous substances within the area covered by the determination. The Department may reopen an investigation and take or require additional remedial action under certain circumstances listed in A.R.S. § 49-287.01(G). If the person seeking a no further action determination wishes to have the work approved for purposes of cost recovery, the person may submit a request for approval under R18-16-413.

#### **R18-16-415. Soil Remediation**

This Section provides the requirements for soil remediations conducted prior to the selection of a remedy under R18-16-410. This Section is necessary to allow soil cleanups, which can usually be conducted in a relatively short period of time, to occur at a site without waiting for the selection of the appropriate groundwater remedy.

A person conducting a soil remediation, under this Section, must meet the Soil Remediation Standards Rule (18 A.A.C. 7, Article 2) and must conduct community involvement activities in accordance with R18-7-404. The per-



son must also submit a Notice of Remediation as required by R18-7-209 in the Soil Remediation Standards Rule and must provide a written report providing site characterization information. If the Department has issued a notice under A.R.S. § 49-287.03, the Notice of Remediation must be submitted to the Department 15 days before conducting the remediation or, if the remediation is already underway, within 15 days after the Department provides the notice.

A person may apply to the Department for approval of soil remediation work and the Department shall approve the work if it meets the requirements of this Section. Submission of the Notice of Remediation and the written report does not constitute an approval.

The process described in this Section should not be confused with the early response actions described in R18-16-405. Early response actions are taken prior to the selection of a remedy, but are not final remedial actions. An early response action may be incorporated into a final remedy or may be modified or discontinued as a result of the remedy selection process. Soil remediations conducted under this Section may be incorporated into a final remedy, but are, themselves, final remedial actions.

#### **R18-16-416. Satisfaction of Settlement Agreement and Achievement of Remedial Objectives**

This Section establishes a process to obtain a determination from the Department that the work required by a settlement agreement has been completed or that the remedial objectives for the site have been satisfied and will continue to be satisfied. A party to a settlement agreement may request a determination by describing how the requirements of the settlement agreement have been satisfied.

Any person may request that the Department determine remedial objectives for the site have been satisfied and will continue to be satisfied. The request must describe how the remedial objectives have been satisfied and will continue to be satisfied, including information regarding any financial mechanisms in place to ensure the continued satisfaction of the remedial objectives. The Department may request additional information to consider the request. Notice of the request is provided by the Department with an opportunity for public comment.

A determination that remedial objectives for the site have been satisfied and will continue to be satisfied means that the Department cannot undertake or require additional remedial actions at the site or portion of a site, other than the actions that must continue to satisfy the remedial objectives. The Department may reopen an investigation and take or require additional remedial action under certain listed circumstances.

This determination is different from a determination of no further action. A determination of no further action means that no further action is needed a site or portion of a site at all.

#### **R18-16-501 through R18-16-505. Interim Remedial Actions**

Among the revisions to the WQARF statute was a new mandate that final remedies address all wells threatened or contaminated due to the release of hazardous substances at or from a site on the registry. Given limited funding and an emphasis on implementation of final remedies in order of priority, there will be WQARF sites where final remedies will not be chosen for many years. The Legislature recognized that there might on occasion be a need for earlier action to address wells and provided for interim remedial actions in A.R.S. § 49-282.03 as a mechanism to do so.

While early response actions described in R18-16-405 also deal with remedial actions conducted prior to the selection of a remedy at a site, decisions to approve or perform those actions are only made once sufficient information is available to characterize the site and determine that the early response action is necessary. Interim remedial actions are primarily intended to provide rapid solutions to water supply problems resulting from WQARF contamination where there is insufficient information about the site to determine whether an early response action would be appropriate. In exchange for this very early approval, the applicant must agree to reimburse the WQARF fund if the Department determines based on later information that the action was unnecessary or the applicant is later determined to be a responsible party. This rule governs approvals of these actions.

#### **R18-16-501. Definitions**

Terms with specific application to the interim remedial action rules are found in this Section.

#### **R-18-16-502. Eligibility**

A well may be considered for funding or performance of interim remedial action if a remedy has not been selected and it meets two conditions. First, the well must currently supply water for municipal, domestic, irrigation or agricultural use or must be currently part of a public water system. Second, the water must be or will be unfit for use in the current or reasonably foreseeable future without treatment due to the release of hazardous substances from a site on the registry.

Only costs directly related to an interim remedial action approved by the Department are eligible for funding from a grant from the fund. Costs incurred by any person prior to the submittal of a request under R18-16-503 are not reimbursable by the Department. Costs incurred by any person after the submittal of a request under R18-16-503 are eligible for funding if the request contained all of the required information and the Department subsequently approves the interim remedial action.

**R18-16-503. Request for Interim Remedial Action**

Any person may request that the Department perform or provide a grant for an interim remedial action. The request must be in writing and include statements describing the eligibility of the well and the reasons why interim remedial action is appropriate. The request must also include additional information listed in the rule if that information is in the possession of or readily available to the person making the request. Although the rule does not require the person requesting an interim remedial action to collect additional information, the request is more likely to be approved by the Department if the person making the request can demonstrate a need for the interim remedial action. If the person requesting interim remedial action intends to perform all or part of the remedial action work, the Department may require submittal of a detailed work plan for the proposed action.

**R18-16-504. Review and Approval of Requests for Interim Remedial Action**

This Section sets out the factors that the Department will consider in its decision to approve or deny requests for interim remedial action. The Department may gather additional information before making a decision. The Department may also decide to initiate an early response action in lieu of granting the request for interim remedial action.

An interim remedial action must be the minimum action necessary to address the loss or reduction of water available to well users during the period before selection and implementation of a final remedy at a site. This does not mean that the Department must approve the remedial action which does the least to address the loss or reduction of available water or must select a temporary solution regardless of cost. The Department may approve an interim remedial action that provides a permanent solution to the water supply problem if a temporary solution is unavailable, more expensive, or incapable of fully addressing the problem during the period before a final remedy is implemented for a site.

The Department shall condition approval of the request for interim remedial action upon execution by the requesting party of a reimbursement agreement under R18-16-505 and an agreement to provide the Department access to the property. The conditions for reimbursement are described in the next Section. The access agreement may be needed to conduct or oversee the interim remedial action or to gather information necessary to evaluate the interim remedial action.

The Department's approval or denial of any interim remedial action is completely discretionary and is not appealable. Costs of the action are either recoverable from the responsible parties, if the action was necessary and the applicant was not a responsible party, or reimbursable by the applicant, if the action was unnecessary or the applicant was a responsible party. An applicant who has reimbursed the WQARF fund as a result of a determination that they are a responsible party may submit the costs of the interim remedial action for credit against liability, under R18-16-409, or bring an action for recovery of costs, under A.R.S. § 49-287.07.

**R18-16-505. Reimbursement**

The person requesting the interim remedial action must reimburse the WQARF fund for all costs incurred in taking the interim remedial action if the Department determines, based on later information in the Record of Decision, that the action was unnecessary based on the criteria in A.R.S. § 282.06 and the remedy selection rules. For example, the interim remedial action would be determined to be unnecessary if the well was never threatened or contaminated by a release at a WQARF registry site. The applicant must also agree to reimburse the WQARF fund if the applicant is later determined to be a party responsible for the release of hazardous substances that threatened or contaminated the well.

The Department must provide the person requesting the interim remedial action with a reimbursement agreement that clearly states the conditions under which the person requesting the interim remedial action must reimburse the fund. The Department may require that the person requesting the interim remedial action provide financial assurance for the obligation to reimburse the fund.

- 7. A reference to any study that the agency proposes to rely on in its evaluation of or justification for the rule and where the public may obtain to review the study, all data underlying each study, any analysis of the study and other supporting material.**

None

- 8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this State.**

Not applicable. This rule will not diminish a previous grant of authority of a political subdivision of this state.

- 9. The preliminary summary of the economic, small business, and consumer impact:**

Not applicable. This rulemaking is exempt from the provisions of Title 41, Chapter 6, Article 3 under session law at Laws 1997, Chapter 287, Section 56(B).

- 10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):**

To increase the clarity and understandability of the rules various grammar, punctuation, format and stylistic changes were made throughout the rules. With regard to content changes, the Department received many comment letters regarding the rules. A detailed description of these comments and any changes to the rules resulting from the

Department's analysis of these comments is found in the summary of the comments and agency responses in item #11.

In addition, the Department initiated a number of changes intended to clarify the intent of the rules:

R18-16-201(D) was amended to provide for the collection of information from governmental agencies that are not "local governments". The preliminary investigation collects information from any appropriate source of information, including government that are not local governments.

In R18-16-401, the definition of "remedial strategy" was simplified by eliminating the 6 examples. As in the proposed rules, these examples appear in more detailed form in R18-16-407(F).

In R18-16-401, definitions of the terms "remedy" and "vadose zone" were added for the purposes of clarity.

The Department reorganized and redrafted R18-16-403 and R18-16-404 for improved clarity and readability of the rules. R18-16-403 is now titled "Scope of Work, Fact Sheet, Outline of the Community Involvement Plan, and Notification of Availability" and deals only with the preparation and provision by the Department of A.R.S. § 49-287.03 notice. The requirements governing the preparation and implementation of community involvement plan by the Department were deleted from R18-16-403(I) and now appear as R18-16-404(C).

R18-16-404 is now titled "Community Involvement Requirements" and establishes the requirements for community involvement activities whether these activities are conducted by the Department or by other persons. R18-16-404(A), R18-16-404(B), and R18-16-404(D) are amended to clarify the Department's intent the Department and parties performing remedial action work at the site coordinate the community involvement activities to minimize duplication of efforts and ensure broad community involvement in the remediation process. The requirements regarding implementation of RI and FS work plans that previously appeared in R18-16-404(C)(3) have been moved to R18-16-406 and R18-16-407.

R18-16-405(A) is amended to clarify that the defining characteristics of an early response action (an early response action is initiated prior to selection of a remedy at a site and is necessary for at least the purposes set out in the subsection) are requirements of the Section for the purpose of approval under subsection (H).

R18-16-405(B)(1) is amended to require that early response actions be based on consideration of the best available information regarding the characterization of the site and the specific technology or method as well as the best available scientific information concerning available methods and technologies.

R18-16-405(H)(1) is amended to incorporate the requirements contained in A.R.S. § 49-282.06(A) which apply to all remedial actions, including early response actions.

R18-16-406(A)(1) is amended to clarify that a remedial investigation establishes the nature and extent of the contamination of non-soil materials as well as the nature and extent of the contamination of soil and waters of the state.

R18-16-406(B) was divided into subsections and reorganized. The requirements under this rule did not change.

R18-16-406(C)(3) is amended to clarify that the field investigations authorized in this Section collect broad information regarding the source of a release. The extent to which the source of the release can be adequately identified and characterized is one issue that a field investigation may address.

R18-16-406(F) previously required that local governments be provided with copies of the draft remedial investigation report. The subsection is amended to require that copies of the report be provided only to interested local government agencies.

R18-16-406(H) is amended to require a person, other than the Department, who prepares a draft remedial investigation report under this subsection to provide copies of comments received regarding the draft remedial investigation report.

R18-16-406(J) is amended to require a person, other than the Department, who prepares a final remedial investigation report under this subsection to provide copies of comments received regarding the draft remedial investigation report.

R18-16-407(B) was divided into subsections and reorganized. The requirements under this rule did not change.

R18-16-407(H)(3)(b) is amended to clarify that the evaluation authorized under this subsection considers risks under a broad range of use scenarios.

407(H)(3)(b)(iv) is amended to clarify that the evaluation authorized under this subsection considers the protection of public health and aquatic and terrestrial biota while implementing the remedial action and after the remedial action.

R18-16-410(A) is amended to clarify the Department's intent that preparation of a proposed record of decision is a remedial action that may be considered and approved by the Department under R18-16-413. The Record of Decision is issued only by the Department.

R18-16-410(B)(8) is amended to state that the purpose of the projected review of the remedy is to determine the effectiveness of the remedy in achieving the remedial objectives.

R18-16-413(F) was amended to conform the rule to the requirements established in A.R.S. § 49-285(B). As amended, the rule conditions approval of remedial actions on compliance with the requirements of this Article, rather than mere compliance with the requirements of the Section.

R18-6-414(A)(1) is amended to state that a no further action determination may be based on compliance with the soil remediation standards rules in their entirety and does not necessarily require a finding of compliance with the soil remediation levels established in R18-7-205.

414(A)(3)(a) is amended to state that a no further action determination may be based on remediation under another of the Department's programs. A no further action determination is not available in regard to properties remediated under non-Title 49 programs.

414(A)(3)(b) is amended to clarify that the finding required under the subsection regards the release of a hazardous substance and not the water impacted by the release. The subsection also specifically cites the water quality standards by their location in 18 A.A.C. 11.

In the proposed R18-16-501, the term "abandoned" meant a well that has certain characteristics. The term applies only to wells. In the interest of the readability of the rule, the term that is now defined is "abandoned well".

R18-16-502(A)(3) has been amended to read "The well is not an abandoned well."

#### **11. A summary of the principal comments and the agency response to them:**

##### **GENERAL COMMENTS**

###### **1. Endorsement of Rules**

**Comment:** The Department received several comments in support of the proposed rules and the process by which they were developed. The comments indicated that the proposed rules are specific, complete, well thought out, and reflect ADEQ's commitment to not only fulfill the statutory mandate, but to implement the spirit of the WQARF program enacted by the Arizona Legislature in 1997. Other comments stated that they supported ADEQ's inclusion of stakeholders in the development of the proposed rules and look forward to continuing this dialogue to achieve a "workable WQARF" as these rules are implemented by ADEQ.

**Analysis:** The Department appreciates the comments. The Department held hundreds of meetings with a multitude of interested parties to ensure the rules meet the goals and intent of the WQARF reform legislation. The resulting rules are the product of numerous stakeholders and extensive public participation. The Department remains committed to involving stakeholders throughout the implementation of the rules to ensure that the goals of the WQARF reform legislation are met.

**Response:** No change to the rules.

###### **2. Rulemaking Process**

**Comment:** A general presumption has been openly discussed during the rule development process that the proposed interim WQARF rules are to be considered the de facto "final" rules by ADEQ. Irrespective of the fact that ADEQ could have quickly and easily adopted CERCLA rules, guidelines or procedures by reference (See A.R.S. § 49-282.06 (B)), it instead embarked on the long and arduous journey to create an intricate matrix of "if, then, else" rules. The long years invested in the development of the proposed interim rules and the very complex nature of their final form, render these rules, for all intent and purpose, final rules.

Despite the fact that the Legislature included a proviso that interim WQARF rules are exempt from the traditional rulemaking process, they did not extend this exemption to the adoption of the final rules. In fact, it is clear from the historical background and committee minutes for Laws 1997, Chapter 287 that the Legislature intended that only the "quick fix" interim rules are exempt from the formal rulemaking process. All final WQARF rules adopted must proceed with the traditional rulemaking process under Title 41, Chapter 6, Article 3. Therefore, if it is the Department's intent to "finalize" the proposed interim rules at this time, the proposed interim rules must comply with the rulemaking requirements under Title 41.

A de facto adoption of final rules also arbitrarily circumvents the checks and balances of the formal rule adoption process make the public participation in the interim rules process seem inadequate. Although the sixty days mandated for public comment on the proposed interim rules have been allotted, only a certain portion of the parties interested may have been aware of this opportunity. In fact, the notices for the two sparsely attended public hearings on the proposed interim rules could only found on ADEQ's web site. Since the traditional rules newsletter has been suspended indefinitely, interested parties without Internet access have essentially had to fend for themselves to continuously "mine" the *Arizona Administrative Register* for notice of the proposed rulemaking. The proposed interim rules will have a serious impact on the health and welfare of Arizonans for generations to come and consideration should be given by the Department to implementing formal adoption proceedings for the proposed "final" rules.

**Analysis:** The Department strongly disagrees with the notion that the proposed rules were drafted with the expectation that they will be "de facto final rules" and is not aware of discussions regarding such a presumption. The Department was mandated to adopt interim rules to implement the new WQARF statutes and this rulemaking represents the Department's best effort to meet the goals and intent of the WQARF reform legislation. The Department

believes that the intent of the Legislature was not only to provide a mechanism for getting rules promulgated quickly, but to allow the Department to get rules in place to determine what works and promulgate final rules based on that evaluation. The Department has complied with the requirements of Laws 1997, Chapter 287 in promulgating the interim rules and will comply with those requirements when promulgating final rules.

While the Department was authorized to adopt CERCLA rules, guidance, or procedures under A.R.S. § 49-282.06(B), the rules, guidance, or procedures were required to be consistent with the new WQARF statutes. ADEQ was also required to consider the recommendations of the Joint Select Committee on WQARF established pursuant to Laws 1996, Chapter 259. The Department evaluated the CERCLA rules, guidance, and procedures and determined that, as a whole, they were not consistent with the goals and intent of the new WQARF statutes or the recommendations of the Joint Select Committee on WQARF. Laws 1997, Chapter 287 was in large part a repudiation of CERCLA. While components of CERCLA rules and guidance might be useful for the WQARF rules, they required extensive modification which precluded the possibility of their incorporation by reference. The Department's determination was supported by the vast majority of stakeholders and by the WQARF Advisory Board.

The complexity of the rules and the length and difficulty of the development process are the direct result of the nature of the WQARF reform legislation of 1997. WQARF reform represented a broad rejection of the CERCLA approach to remediation of contaminated sites in favor of an approach that was specifically tailored to work in Arizona. The legislation was complex, comprehensive, and unlike anything that had preceded it on the federal level or in other states. While the legislation provided the framework and the recommendations of the Joint Select Committee on WQARF provided additional guidance, many questions were still left unanswered. The length and complexity of the rules development process reflects these unanswered questions.

Public participation in the development of these rules was extensive. The Department held hundreds of meetings over several years to discuss issues related to the implementation of the WQARF reform statutes. The rules are the product of numerous, intensive discussions with interested parties including, public stakeholders, private stakeholders, technical experts, and members of the Groundwater Cleanup Task Force who provided recommendations to the Joint Select Committee on WQARF. Throughout the process, the Department provided notice of meetings and drafts of proposed rule language to identified interested parties and to the general public through ADEQ's web site.

The Department shares the commenter's regret that funding considerations required the discontinuation of the Rules Letter. However, the Department took every reasonable opportunity to keep the public informed regarding the status of these rules. The rules were announced and posted as proposed rules on ADEQ's web site approximately three weeks prior to publication in the *Arizona Administrative Register*.

**Response:** No change to the rules.

R18-16-201 and R18-16-202.

#### PRELIMINARY INVESTIGATIONS AND SITE SCORING

##### R18-16-201.

##### Preliminary Investigations

###### 1. Notification of Termination of a Preliminary Investigation

**Comment:** Water providers within the same groundwater sub-basin as a potential WQARF site should be notified when a preliminary investigation is terminated under R18-16-201(E).

**Analysis:** The Department agrees that if notification of the preliminary investigation (PI) has been provided under R18-16-201(F), affected water providers should be notified if the PI is terminated under R18-16-201(E). However, it is not clear that every water provider in a groundwater sub-basin will be an affected water provider for the purposes of this rule. Notice of initiation or termination of a PI should be provided to affected water providers who may or may not be all of the water providers in the sub-basin.

**Response:** A new R18-16-201(F) is added as follows:

F. The Department shall notify affected water providers of the termination of a preliminary investigation under R18-16-201(E).

###### 2. Standards for Termination of Preliminary Investigation

**Comment:** The general reference to "water quality standards" in R18-16-201(E)(2)(b) should be stated more specifically to include, but not limited to, numeric and narrative aquifer water quality standards, Safe Drinking Water Act maximum contaminant levels, and numeric and narrative surface water standards.

**Analysis:** The Department agrees that the standards referenced should include specific citations to the aquifer and surface water quality standards. However, a reference to maximum contaminant levels is inappropriate in this context.

**Response:** R18-7-201(E)(2) is revised as follows:

b. Based on valid sampling data, that the release or threatened release of a hazardous substance does not and will not cause or threaten to cause a violation of Water Quality Standards prescribed in 18 A.A.C. 11, or if there is no water quality standard, a risk level approved by the Department to protect public health and the environment.

3. Notification of Initiation of a Preliminary Investigation

**Comment:** The reference to “water provider” in the second sentence of R18-16-201(F) should be changed from singular to plural to reflect the possibility of multiple affected water providers at a single site.

**Analysis:** The Department agrees.

**Response:** Renumbered R18-16-201(G) is revised as follows:

G. If the Department does not terminate or suspend a preliminary investigation under subsections (C) or (E), the Department shall proceed with the preliminary investigation by collecting any additional information necessary to score a site using the eligibility and evaluation model under R18-16-202. The Department shall notify affected water providers and affected local governments of the initiation of the preliminary investigation. A work plan shall be developed and implemented to collect additional information and shall contain the following information:

4. Preliminary Investigation Report

**Comment:** Is the report required in R18-16-201(H) the same as the draft site registry report referenced in R18-16-201(J)? Who is supposed to prepare the report? Also, R18-16-201(H) should be amended to state that the information to be included in the preliminary investigation report is the information collected under R18-16-201(G). Finally, all water providers within the same groundwater sub-basin as the investigation and all others who provided data should be provided copies of the preliminary investigation report.

**Analysis:** The report required in R18-16-201(H) (now R18-16-201(I)) is not the same as the draft site registry report; it is a tool for the Department to use in developing the draft registry report. Renumbered R18-16-201(I) will be revised to refer to the report as a “preliminary investigation report.” Subsection (J) and subsection (K) will also be amended to refer to the “preliminary investigation report” as appropriate.

Preparation of the preliminary investigation (PI) report is one of many tasks described in these rules that may be performed by the Department, by a responsible party, by a property owner or, at least in theory, by virtually any other person. However, it should be noted that renumbered R18-16-201(L) allows any person to conduct any part of the PI, including the preparation of the report, only by written agreement with the Department.

The Department agrees that it would be helpful to specify that the information to be included in the PI report is the information collected under renumbered R18-16-201(H). The Department also believes that it would be helpful to specify the information collected in renumbered R18-16-201(G).

In regard to providing copies of the PI report to water providers, the Department provides copies of the draft registry report to owners and operators of sites for comments (pursuant to A.R.S. § 49-287.01(C)). Later, the report and the site’s score is subjected to public comment. Instead of providing copies of what may be a lengthy document with analytical results, the Department believes that affected water providers should review the draft registry report first and request the PI report as needed.

**Response:** R18-16-201(H), R18-16-201(I), and R18-16-201(J) (now R18-16-201(I), R18-16-201(J), and R18-16-201(K)) are revised as follows:

- I.** Following completion of the preliminary investigation, a preliminary investigation report shall be prepared. The report shall include the following information:
1. Information gathered and reviewed under subsection (G), including a summary of the information with references to relevant reports.
  2. If applicable, the conceptual site model developed under subsection (H).
  3. If sampling was conducted under subsection (H):
    - a. A description of the sampling activities.
    - b. Analytical results, including a summary of the results with references to relevant reports.
    - c. A map of sample locations.
    - d. Data quality information, including a summary with references to relevant reports.
- J.** The Department shall approve the preliminary investigation report prepared under subsection (I) if it contains sufficient valid information to score the site using the eligibility and evaluation site scoring model or to make a determination that no further investigation or action is needed.
- K.** Based on a review of the preliminary investigation report prepared under subsection (I), the Department shall:
1. Determine that no further investigation or action is needed using the criteria in subsection (E); or
  2. Prepare a draft site registry report under A.R.S. § 49-287.01(B).

R18-16-301 and R18-16-302.

PUBLIC INFORMATION

R18-16-301.

Public Information

1. Minimum Requirements

**Comment:** R18-16-301(A), (B), and (C) are all comprised of extremely long sentences. These sentences are too long and unclear to be usable.

**Analysis:** The Department agrees that R18-16-301(A) and R18-16-301(B) are long and potentially confusing. They will be revised to make clear the number of days required to publish notices and how notices must be mailed.

**Response:** R18-16-301(A) and (B) are revised as follows:

- A. If notification by publication in a newspaper is required by A.R.S. Title 49, Chapter 2, Article 5 or by any community involvement plan created under A.R.S. § 49-287.03 and A.R.S. Title 49, Chapter 2, Article 5 does not specify the frequency of the notification, the Department or person publishing notice shall publish notice according to the following minimum requirements:
1. One day in a daily newspaper of general circulation in the county where the site is located; or
  2. If other than a daily newspaper, two days in a newspaper of general circulation in the county where the site is located.
- B. If notification by direct mail is required by A.R.S. Title 49, Chapter 2, Article 5 or by any community involvement plan created under A.R.S. § 49-287.03 and A.R.S. Title 49, Chapter 2, Article 5 does not specify the form of the mailing, the Department or person providing the notification shall provide the notification according to the following requirements:
1. By bulk or first-class mailing; or
  2. If the bulk or first-class mailing would cause unreasonable delay in receiving time-sensitive materials, the Department or person shall provide the notification in a manner sufficient to timely reach those who may be impacted.
2. Repository Locations

**Comment:** Councils of governments should be added to the repository locations in R18-16-302(B) to be consistent with ADEQ's aquifer protection program.

**Analysis:** R18-16-302(B) specifies that public information repositories may be located in a public or semi-public facility to which the public has reasonable access. The rule is intended to include such facilities where councils of government are located.

**Response:** No change to the rule.

R18-16-401 through R18-16-416.

#### REMEDY SELECTION

##### General Comments

##### 1. Different Approaches Under WQARF and UST

**Comment:** There appears to be different approaches that ADEQ is developing to approve water cleanups that result in water quality exceeding water quality standards. Laws 1997, Chapter 287 amended both the WQARF statutes (A.R.S. § 49-282.06(D)) and the Underground Storage Tank (UST) statutes (A.R.S. § 49-1005(E)) to provide for these types of approvals. Notwithstanding that the language of both statutory provisions is virtually identical, there are significant differences between the approach being developed to approve remedial actions under the WQARF program (proposed R18-16-407 governing feasibility studies and R18-16-414 governing no further action determinations) and the approach being developed to approve corrective actions under the UST rulemaking, which was proposed on September 1, 2000, at 6 *Arizona Administrative Register*. Given the high degree of similarity of the authorizing statutes, it does not appear in the interests of creating an efficient, coordinated, and cohesive water quality control program in this state for the Department to be developing two dissimilar approaches to dealing with the same issue.

**Analysis:** The remediation approaches developed for the WQARF program and the UST program are different because there are significant differences between the scope of the programs and the types of sites dealt with in the two programs. The UST program manages only releases from underground storage tanks. A release of petroleum into groundwater is usually dissolved in the top 20 to 30 feet of the water table and typically extends less than 1000 feet from the source. Once the source is removed from a UST, the contamination biodegrades relatively quickly.

In contrast, WQARF sites are contaminated with numerous hazardous substances, particularly solvents, and the magnitude of these sites dwarf UST sites. Solvents can contaminate hundreds of feet vertically from the top of the water table and the plume can extend for miles. Sources of solvent releases are difficult to find and solvent contamination biodegrades very slowly, if at all.

The UST program is also designed for owners and operators to remediate the site and, for those eligible, to obtain reimbursement from the State Assurance Fund (SAF). The proposed UST Corrective Action Rule provides a detailed process for owners and operators to conduct the work. The proposed UST Corrective Action Rules are intended to be used in conjunction with the SAF Rules for owners and operators to obtain reimbursement from the SAF.

The WQARF Remedy Selection Rules also provide for parties to conduct work. However, WQARF is not a reimbursement program and requires much greater coordination with the Department due to the scope of WQARF sites and greater number of those impacted by the contamination. WQARF sites also require much more extensive com-

munity involvement than UST sites due to the magnitude of the contamination and that fact that the contamination will be a problem to deal with for many decades.

**Response:** No change to the rules.

2. Registered Professional

**Comment:** The proposed rules make many references to reports that are either created by or submitted to ADEQ. The rules should clearly state that, to be consistent with the Arizona Board of Technical Registration's statutes (A.R.S. § 32-101 et seq.) and rules promulgated thereunder (A.A.C. R4-30-101 et seq.), work must be performed by ADEQ or by others under the direction of the appropriate registered professional and work products must be sealed by the appropriate registered professional.

**Analysis:** The requirements of A.R.S. § 32-101 et seq. are in effect regardless whether it is stated in these rules or not. However, the requirements for an original seal imprint and signature of a registered professional required by the Arizona Board of Technical Registration under A.R.S. § 32-101 et seq. and R4-30-101 et seq. will be referenced in R18-16-413.

**Response:** A new R18-16-413(A)(8) will be added as follows:

8. An original seal imprint and signature of a registered professional if required by the Arizona Board of Technical Registrations under A.R.S. Title 32, Chapter 1 and the rules made under that Chapter.

3. Liability for Water Providers

**Comment:** ADEQ should retain that water providers (who are non-responsible parties) are not fiscally responsible for cleanups when their wells capture plumes they did not cause.

**Analysis:** These rules do not address liability. Responsible party issues are addressed in A.R.S. § 49-283. If a water provider is not a responsible party as described in A.R.S. § 49-283, they are not a responsible party under these rules.

**Response:** No change to the rules.

R18-16-401. Definitions

1. Hazardous Substance

**Comment:** The term "hazardous substance" is used throughout the proposed rules (e.g., in the proposed definition of "contaminant of concern" in proposed A.A.C. R18-16-401). The rules should clarify that they incorporate the definition of "hazardous substance" found in A.R.S. § 49-281(8), the controlling definition for purposes of WQARF. If this clarification is not made, it is possible that the term "hazardous substance" could be construed according to A.R.S. § 49-201(18), which contains a broader definition of that term than has been adopted for purposes of WQARF. Specifically, the definition in A.R.S. § 49-201 does not include the petroleum exclusion contained in the WQARF definition.

Although petroleum releases can, in very limited circumstances, be addressed under WQARF pursuant to A.R.S. § 49-283.02, the vast majority of such releases are dealt with under the UST program rather than WQARF. The Legislature did not intend by enacting A.R.S. § 49-283.02 to require UST releases to be subject to WQARF (See Laws 1997, Chapter 287, § 59.) Unless it specifies which statutory definition of "hazardous substance" controls in these proposed rules, ADEQ runs the risk of creating some confusion regarding the scope of the rules.

**Analysis:** The Department agrees that the term "hazardous substances" should be defined to incorporate the definition at A.R.S. § 49-281(8).

**Response:** R18-16-401 will be revised by adding the following:

"Hazardous substances" has the same meaning as in A.R.S. § 49-281(8).

2. Water Provider

**Comment:** Under the proposed rules, "water provider" is defined as the owner or operator of a public water system or an agricultural improvement district. As currently drafted, this definition does not include irrigation and water conservation districts. Title 48 of the Arizona Revised Statutes provides for a number of different types of special taxing districts. Agricultural improvement districts are dealt with in Chapter 17 and irrigation and water conservation districts are governed by Chapter 19.

While it appears that there are certain benefits to be gained from being included in the definition, additional impacts are not clear. In large part, those benefits will be available to other types of districts by virtue of being a well owner. Therefore, it is suggested that R18-16-411(B) be revised as follows:

**B.** If the remedy or an early response action includes well replacement or provision of an alternative water supply, the Department or any person conducting the design shall consult with the affected well owner or water provider. ~~For a well owner, the design of that portion of the remedy or early response action shall meet the well~~



~~owner's water quality and quantity needs in accordance with A.R.S. § 49-282.06(B)(4)(b) and R18-16-407(G).~~  
For a water provider or well owner, the design of that portion of the remedy or early response action shall:

- Comply with laws and regulations governing the water provider's or well owner's obligations to its customers;
- Be implementable without significant alteration of the water provider's or well owner's existing system; and
- Meet the water provider's or well owner's water quality and quantity needs in accordance with A.R.S. § 49-282.06(B)(4)(b) and R18-16-407(G).

**Analysis:** The Department did not intend to exclude irrigation and water conservation districts from the definition of "water provider." The rules are designed to protect and provide for uses of water. As a result, water providers are critical not only during the design and implementation of the remedy, but during the remedial investigation and remedy selection process. Throughout the rules, the Department is instructed to submit reports to and solicit comments from water providers to ensure that the water providers are informed about the contamination and so that the remedial actions meet their needs. The remedial objectives are also developed to be consistent with water management plans of water providers. Therefore, the definition of "water provider" will be revised to include irrigation and water conservation districts.

**Response:** The definition of water provider will be revised as follows:

"Water provider" means the owner or operator of a public water system, an agricultural improvement district, or an irrigation and water conservation district.

### 3. Transition Site

**Comment:** The definition of "transition site" should be deleted from R18-16-402 and added to the list of definitions in R18-16-401.

**Analysis:** The term "transition site" only appears in R18-16-402. Although the definition of "transition site" appears to be out of place in R18-16-402, its placement is intended to ensure that use of the term is specific to this Section.

**Response:** No change to the rule.

### R18-16-402. Applicability

#### 1. Betterment

**Comment:** The second sentence in R18-16-402(B) is too long to clearly discern its meaning.

**Analysis:** The Department believes that the language clearly indicates that a property owner, a well owner, or a water provider cannot obtain betterment as a result of a release of hazardous substances. WQARF will only provide for or cover the remedial action if it is necessary for the remedy or early response action.

**Response:** No change to the rule.

#### 2. Transition Sites

**Comment:** A distinction should be made between a site where the work began after the adoption of the new WQARF laws versus a site where remedial investigation/feasibility study (RI/FS) reports were prepared and completed under the former WQARF laws, rules and process using CERCLA guidelines. Although exemptions exist in the proposed interim rules for transition sites that have performed RI/FS work in good faith under the previous requirements set forth by ADEQ, these exemptions are narrowly applied under R18-16-406(D), R18-16-406(F), R18-16-406(J), and R18-16-407 through R18-16-412. As a result, a person who completed RI/FS work or constructed remedial improvements prior to the adoption of the new WQARF laws is now required to conduct additional work.

It is unfair, inappropriate, and not cost-effective to require a person who has substantially complied with current standards to comply with new and different standards. This places an additional burden on people who have substantially completed RI/FS reports and fails to promote expedient remediation.

Sites that meet the following conditions should be exempt from the requirements of the proposed rules: 1) the RI and FS work is substantially completed; 2) the RI and FS are in substantial compliance with the current ADEQ standards (Title 49, Chapter 2, Article 5 and the National Contingency Plan (NCP) under CERCLA); 3) the RI and FS have been submitted to ADEQ prior to the effective date of the rules; and 4) recognition that if not for factors beyond the control of the responsible party (i.e., a lack of response to requests for approval over several years or apathy from the public in the community involvement area), the RI and FS for the transition site would have otherwise been approved prior to the effective date of the proposed interim rules.

Alternatively the approval of the previously submitted RI/FS reports could be conditioned on the consent decree process. The rules could be modified to include a consent decree exemption for transition sites where RI/FS reports have submitted to the Department prior to the effective date of the WQARF rules. Under a consent decree exemption, the Department (and the public) would still have the opportunity to review the reports to determine compliance with the previous requirements under Title 49 and the NCP under CERCLA. Providing an exemption for transition sites where the completed work has been in substantial compliance with the current guidelines for RI/

FS work is fair and ensures that remediation work will be expedited and cost effective as proposed under the new WQARF Law.

**Analysis:** A.R.S. § 49-282.06 requires the Department to adopt rules and provides requirements that the rules must contain. The Department believes that these rules meet these requirements. The Department does not believe that exempting sites from the rules based on the suggested four criteria or a consent decree process is consistent with the requirements in A.R.S. § 49-282.06 or is authorized in statute. In particular, the previous WQARF statutes have been amended by Laws 1997, Chapter 287 and major provisions of the new WQARF statutes were revised to make it different than CERCLA and the NCP.

However, R18-16-402 does provide a process to transition sites being cleaned up under the old WQARF statutory requirements to the new WQARF statutory requirements. The requirements for transition sites depends on the level of approval received for work conducted and how far the site is towards implementing the cleanup. If, prior to the effective date of these rules, the Department approved a remedial action plan or entered into a written agreement that includes the implementation of a remedy or the substantial equivalent of a remedy, the approval or agreement apply and not these rules. In addition, the rules do not apply to work governed by the terms and conditions of a court decree or judgement entered into prior to the effective date of the rules. A person conducting work at other sites is required to follow the rules, but a process is provided for work performed prior to the effective date of the rules to obtain approval of the work.

**Response:** No change to the rule.

R18-16-403. Scope of Work, Fact Sheet, Outline of the Community Involvement Plan, and Notification of Availability

1. Ecological Receptors

**Comment:** At several points in the proposed rules, reference is made to ecological receptors or ecological risk (e.g., in proposed A.A.C. R18-16-403(B)). These terms are not defined anywhere in WQARF.

ADEQ has at times convened a stakeholder group to look at ecological risk issues. Has that group reached conclusions about the proper scope and conduct of ecological risk analyses? If not, has the Department developed guidance as to what it believes constitutes an ecological risk, or how it believes ecological risk assessments will need to be performed by the Department or by private parties? If so, in what forum was that guidance developed, and how is it publicly available? Without any further elaboration or guidance (even in the preamble), use of the term “ecological risk” is confusing.

**Analysis:** The Department has in the past convened stakeholders groups to discuss ecological risk issues and to develop guidance documents as part of implementation of the soil remediation standards rules (A.A.C. R18-7-201 et seq.) However, in each instance, no conclusions were reached and no documents were developed due to lack of expertise and interest. The Department has since determined that ecological risk issues arise only in very limited circumstances and that existing guidance available from the Environmental Protection Agency and others, as well as the Ecological Risk Policy adopted by ADEQ, is sufficient. Much of the guidance has been developed and reviewed by an extensive list of experts and details how to determine potential impacts to aquatic and terrestrial biota, and how to determine the risks to that biota.

**Response:** No change to the rule.

2. Endorsement of Community Involvement Process

**Comment:** The Department should be commended for recognizing the importance of strong, open public involvement throughout the WQARF remedy selection process. This is particularly evident in R18-16-403 and 404.

**Analysis:** The Department appreciates the comment and agrees that effective community involvement is essential to the WQARF remedy selection process.

**Response:** No change to the rule.

3. Interested Persons

**Comment:** “Interested persons” is used throughout R18-16-403(I). This term should be defined.

**Analysis:** Part of the purpose of the community involvement plan (CIP) developed under R18-16-403(I) (now R18-16-404(C)) is to determine the interested persons. R18-16-404(C)(3) requires the Department to develop a community profile and an assessment of community concerns, issues, and other impacts, in order to determine interested persons and the best methods to notify those persons. This allows the Department to tailor the CIP to the needs of the community. It is not appropriate to develop a definition of “interested persons” for every site.

In general, the Department first identifies interested persons after the notification under A.R.S. § 49-289.02 is provided. This notification is perhaps the first notification the public receives that there may be hazardous substance contamination in the area. It is sent to residents, commercial occupants, and owners of wells within a preliminary community involvement area. This notice contains an opportunity for recipients to be added to the site’s mailing list and to identify other persons who should receive similar notice. This mailing list is used as the starting point to determine interested persons under the CIP.

**Response:** No change to the rule.

4. Newsletter Recipients

**Comment:** Councils of governments should be added to those who are provided newsletters in R18-16-403(I)(1)(i).

**Analysis:** The rule is intended to include councils of government if they are an interested person as described in Issue # 3 above.

**Response:** No change to the rule.

R18-16-404. Community Involvement Requirements

No comments were received on this Section.

R18-16-405. Early Response Actions

1. Additional Guidance Needed

**Comment:** Additional guidance is needed on the evaluation of proposals for early response actions.

**Analysis:** The Department agrees that guidance documents will be helpful in the implementation of the rules. The Department will be developing guidance in the future and will be soliciting comments from stakeholders as it is developed.

**Response:** No change to the rule.

2. Rebuttable Presumption

**Comment:** R18-16-405(I) contains a rebuttable presumption that wells are threatened by contamination if they are: 1) one-quarter mile upgradient of the areal extent of contamination; 2) one-half mile cross-gradient of the areal extent of contamination; or 3) one mile downgradient of the areal extent of contamination. ADEQ should explain the basis for these figures and should clarify that they will not be used in any other contexts or programs.

**Analysis:** This rebuttable presumption was added to enable early response actions to be self implementing. The figures were based on an evaluation of other sites where wells are impacted or are threatened by contamination. This rebuttable presumption is intended to be used only in the context of early response actions under R18-16-405.

**Response:** No change to the rule.

3. Early Response Action Criteria

**Comment:** Please clarify the use of the term “address” in relation to current risks in R18-16-405(A)(1) and in relation to sources of contamination in R18-16-405(A)(3).

**Analysis:** The term “address”, as used in R18-16-405(A), is intentionally broad. An early response action may be performed by the Department or by any person in response to a broad range of site-specific occurrences. The rule is not intended to limit the circumstances in which an early response action may be necessary beyond the general conditions set out in R18-16-405(A)(1) through R18-16-405(A)(4).

**Response:** No change to the rule.

4. A.R.S. § 49-287.03 Notice

**Comment:** In R18-16-405(G), what is meant by “a site covered by a notice issued by the Department under A.R.S. § 49-287.03?”

**Analysis:** The Department agrees that a site “covered” by this notice is unclear. Under A.R.S. § 49-287.03(C), the Department issues notice of the availability of the scope of work, a fact sheet and an outline of the community involvement plan. The notice is provided to potentially responsible parties and is published in a newspaper of general circulation in the county in which the site is located. This subsection applies after the Department has issued notice under 287.03(C) at the site. The rule will be revised to make this clear.

**Response:** R18-16-405(G) will be revised as follows:

- G.** After the Department has issued notice under A.R.S. § 49-287.03 for a site or a portion of a site, a person conducting an early response action at a site or portion of a site shall notify the Department, in writing, of the early response action. The notice shall contain a brief description of the early response action. The notice shall be given at least 15 calendar days before the early response action is commenced, or as soon thereafter as practicable depending upon the exigencies of the circumstances. If the early response action has commenced before the Department issues notice under A.R.S. § 49-287.03, written notice of the early response action shall be given within 15 calendar days after the Department’s notice is given. After notice of a proposed remedial action plan has been given under R18-16-408(C), an early response action may be initiated only after the Department has approved the early response action.

R18-16-406. Remedial Investigations

1. Guidance Needed

**Comment:** Successful implementation of this rule depends upon development by ADEQ, with stakeholder input, of additional guidance as follows:

1. Under the proposed rule, a remedial investigation under WQARF will require collection of information regarding current and reasonably foreseeable uses of land and waters of the state that have been impacted by the subject WQARF release. The rule attempts to provide a framework for how the person conducting the remedial investigation collects this information by specifying an appropriate “reasonably foreseeable” time-frame and directing that water providers, landowners, and local governments with land use jurisdiction be consulted. As ADEQ, its contractors, and “working parties” undertake to comply with this provision, their experience will allow development of a more detailed framework that should be memorialized for purposes of consistency and compliance with the letter and the spirit of the proposed rule. The federal counterpart to WQARF does not contain a similar requirement, so that guidance or policy issued by the United States Environmental Protection Agency (EPA) for remedial investigations may not be helpful in implementation of this rule.

2. Explicit, publicly available guidance is necessary regarding development of remedial objectives and preparation of the remedial objectives report. This process is distinct from the process identified above of gathering information regarding uses of land and water.

3. Additional guidance is needed on the remedial objectives applicable to landfills (the “no betterment” principle).

**Analysis:** The Department agrees that guidance documents will be helpful in the implementation of the rules. The Department will be developing guidance in the future and will be soliciting comments from stakeholders as it is developed.

**Response:** No change to the rule.

2. Consultation With Water Providers

**Comment:** The Department received numerous comments in support of the provisions in R18-16-406(D) to consult with water providers on information regarding current and reasonably foreseeable uses of water. One comment indicated that addressing the enormous problem of groundwater contamination in Arizona with limited available financial resources will require creativity on the part of ADEQ and all affected parties. The proposed rule promotes that creativity by requiring collaboration with water providers who are responsible for delivering safe water to end users. This collaboration is key to the WQARF program’s success.

Another comment suggested that water providers communicate directly with water users and thus must be informed as to community involvement efforts. Providers are generally experts regarding long range water resource planning and thus are a key player in identifying current and reasonably foreseeable water uses. Water providers manage large and complex treatment and distribution systems and thus must be involved in identifying and analyzing potential remedial strategies and measures. Because of water provider’s responsibilities to protect their customers, water providers have a strong interest in the quality and integrity of WQARF remedies. The proposed rule recognizes all of these issues and addresses them, from the provisions of Sections R18-16-403 and 404 regarding community involvement to the provisions of R18-16-411 regarding remedial design and implementation.

Other comments indicated that the requirement to consult with water providers is crucial. Water producers should be notified of plans to remediate contaminated water within its service area and which could materially impact its future use of that water. The party that relies on a quality water supply and is primarily impacted by contamination to that water supply should always be a part of the process, and this rule goes a long way to ensure that this will happen in a uniform and structured manner. This provision should also help foster collaborative and effective means to remediate contaminated water supplies and meaningfully protect water resources in a cost-effective manner.

**Analysis:** The Department agrees that consultation and collaboration with water providers is a critical element of the rules. Water providers develop extensive water management plans to meet the assured water supply requirements, if applicable, and to meet their significant legal obligations to their customers. Water providers rely on these plans in planning new development, preserving or enhancing existing development, and managing their treatment and distribution systems. The review of these plans in consultation and collaboration with water providers is essential to determine the appropriate remedy.

**Response:** No change to the rule.

3. Definition of Reasonably Foreseeable Use

**Comment:** The Department received a few comments on the definition of reasonably foreseeable uses of land and waters of the state in R18-16-406(D). One commenter indicated that the second sentence, “Reasonably foreseeable uses of land are those uses of land likely to occur at the site within a reasonable time period” contains a circular definition and therefore has no meaning. The commenter suggested that “reasonably foreseeable uses” should be more clearly defined and the time period should be made consistent with assured water supply rules.

Another commenter indicated that the phrases “reasonably foreseeable,” “reasonable time,” and the indefinite time period associated with water uses, may cause unnecessary delays in the process and possibly require litigation over whether or not a use will probably be implemented or might possibly be implemented at some undetermined future date. The commenter stated that Black’s Law Dictionary defines “foreseeability” as the quality of being reasonably anticipatable. The term “reasonably foreseeable” has been held to mean a duty imposed when an event has some reasonable probability of occurring, not one simply within the realm of possibility. There is sufficient ambiguity for a community advisory board, water provider or land-owner to argue an expanded interpretation of these phrases as stated in the proposed rules and thereby impede the remediation process.

The commenter also indicated that the rule fails to provide specific guidance as to what types of acceptable uses of water might occur over the next 100 years or more. This may lead to defining uses based upon a leap of logic or imagination. The confusion over what is or is not a reasonably foreseeable use, especially so far into the future, can only further serve to impede the self-implementing goals of the rule. Thus, clarification in the rules of the current definitions for reasonably foreseeable future uses for land or water should be considered.

**Analysis:** The Department agrees that the last phrase, “within a reasonable time period” of the definition of “reasonably foreseeable uses of land” as proposed does not add any meaning to the sentence and will be deleted. However, the Department does not agree that the time period should be consistent with the assured water supply requirements. The definition is intended to apply where there is a general idea of what the land will be used for and those uses will not obviously interfere with land use plans of the local jurisdictions. Some communities may have land use plans with 100 year projections, but other communities may only have current land use information.

In regard to further refining the term “reasonably foreseeable,” the Department agrees that it means that a use should have some reasonable probability of occurring, not one simply within the realm of possibility. At this stage of the remedial investigation, the Department is collecting all types of information about the site, including potential uses. The Department does not wish to limit the uses beyond those uses that are believed to have some reasonable probability of occurring.

These uses are listed in the draft remedial investigation report and subjected to public comment. The Department then conducts a meeting to establish remedial objectives. The purpose of that meeting is to get the interested parties together, discuss the uses, and determine what uses have some reasonable probability of occurring. The Department evaluates all of the information received at the meeting and prepares a report of proposed remedial objectives for the site. These proposed remedial objectives are also subjected to public comment.

The Department believes that in light of the extensive community involvement process outline above, further refining the term “reasonably foreseeable” is not necessary. As indicated in Issue #1, any specific issues on the uses or the process would be best accomplished in guidance.

**Response:** R18-16-406(D) is revised as follows:

- D.** The remedial investigation shall include the collection of information regarding current and reasonably foreseeable uses of land or of waters of the state that have been or are threatened to be impacted by the release, and projected time-frames for future changes in those uses. Reasonably foreseeable uses of land are those uses of land likely to occur at the site. Reasonably foreseeable uses of water are those likely to occur within 100 years unless a longer time period is shown to be reasonable based on site-specific circumstances. Information may be solicited from any interested person including any known well owner. Information collected shall include:
1. Information regarding current and reasonably foreseeable uses of water for each aquifer that is impacted or threatened to be impacted by the release, considering any hydraulic connection between aquifers. The information shall include the locations and uses of existing wells, including all wells already impaired due to contamination, the locations and uses, if known, of any planned wells, and any written water management plans used by water providers whose water supplies may be impacted by the release. This information shall be collected in consultation with water providers.
  2. Information regarding current and reasonably foreseeable uses of water for each segment of surface water impacted or threatened to be impacted by the release. This information shall be collected in consultation with water providers.
  3. Information regarding current and reasonably foreseeable uses of land impacted or threatened to be impacted by the release within the community involvement area. General land use information shall include the current type of use, density, character, and governmental jurisdictions. Future land use changes shall be considered using population projections, growth, plans for future development and local land use plans. This information shall be collected in consultation with local governments with land use jurisdiction. The information collected shall also include specific land uses and property ownership for properties where the land use is impacted or threatened to be impacted by the release.
  4. Reasonably Foreseeable Uses of Water; 100 Year Time-frame

**Comment:** The Department received several comments on the 100 year time-frame for reasonably foreseeable uses of waters of the state described in R18-16-406(D). Several of the comments were in support of the time-frame because the 100 year time-frame corresponds to that used for assured water supply purposes. The comments sug-

gested that limiting the planning horizon to something less than 100 years would be short-sighted and could potentially make parcels unable to be developed that could have been served well water but for contamination to an aquifer.

Another comment questioned the basis for using 100 years used to determine reasonably foreseeable uses. The commenter was also concerned that the use of 100 years may represent an interpretation of the term “reasonably foreseeable” that may be used in other contexts (e.g., in interpreting the narrative aquifer water quality standard discussing impairment of reasonably foreseeable uses found in A.A.C. R18-11-405(C)). The commenter suggested that ADEQ should make it clear that the presumption applies only with respect to registry sites in the WQARF program and that these sites are unique enough (i.e., size, type of contaminants typically present, etc.) that this presumption should not necessarily apply in other contexts.

**Analysis:** The Department agrees that the determination of reasonably foreseeable uses of water should be based on a time-frame of at least 100 years. This time-frame is consistent with the assured water supply requirements and is appropriate given the magnitude of contamination at most WQARF sites and the fact that solvents, which biodegrade very slowly, are typically found at these sites.

It is not the Department’s intention for this presumption to apply to sites other than WQARF or to be used in other contexts.

**Response:** No change to the rule.

#### 5. Solicitation of Land and Water Use Information

**Comment:** The fourth sentence of R18-16-406(D) currently allows the person performing the remedial investigation (RI) to solicit information regarding current and foreseeable uses from any interested person including any known well owner. The rule should be amended to require this solicitation of information.

**Analysis:** The Department disagrees that this solicitation of information should be required. The rule provides an opportunity for the person performing the RI to solicit information from a broad range of “interested persons.” The rule was intended to solicit information from water providers, well owners, property owners, and local governments. These people/entities are or will be directly impacted by the release and the remedy and are therefore critical in obtaining information on uses of land and water. This does not mean that other information is not necessary to collect. Other agencies and persons may have information, but the sources of that information will be different for every site.

In the event that the person performing the RI does not solicit information from all the necessary interested persons, those parties will receive notice of the opportunity to comment on the draft RI report under R18-16-406(E) and provide pertinent information on the uses of land and water. Interested persons are also invited to attend meetings to discuss remedial objectives under R18-16-406(I). There are also numerous opportunities to comment on the remedy provided in the rule.

**Response:** No change to the rule.

#### 6. Presumptive Uses of Water

**Comment:** A.R.S. § 49-282.06 allows, but does not require, ADEQ to approve a remedial action that may result in water quality exceeding water quality standards. Given the mandate under A.R.S. § 49-224(B) that all aquifers “shall be classified for drinking water protected use unless the classification is changed...”, R18-16-406(D) should be changed to include a presumption that one of the uses for all aquifers and surface water is drinking water unless proven otherwise. The burden of proof should not be placed not on water providers or water users, but on the parties responsible for the contamination.

**Analysis:** The Department, with extensive stakeholder participation, determined that a burden of proof or a presumption is not needed in the rules. Instead of focusing on setting cleanup standards in the aquifer or surface water, this rule identifies current and reasonably foreseeable uses of land and water and sets remedial objectives based on those uses. The remedy is then designed to protect and provide for those uses. This process provides maximum flexibility in selecting remedies and ensures that uses that are impaired by the contamination are provided.

**Response:** No change to the rule.

#### 7. Uses of Surface Water

**Comment:** Beneficial uses for surface water in R18-16-406(D)(2) should always include instream-flow uses. In addition, the second sentence of this Section should be edited to read, “This information shall be collected in consultation with all water providers in the same surface water sub-basin as the WQARF site as well as in consultation with the US Fish and Wildlife Service and the Arizona Department of Game and Fish.

**Analysis:** R18-16-406(D)(2) currently provides for collection of information regarding current and reasonably foreseeable uses of surface water. This would include instream-flow uses. The rule also provides for the collection of information with relevant government agencies, including the U.S. Fish and Wildlife Service and the Arizona Department of Game and Fish. The intention of the rule is to contact all the people and agencies that are necessary to obtain information regarding uses of the water.

However, it is not clear that every water provider in a surface water sub-basin will be an affected water provider for the purposes of this rule. Information should be collected in consultation affected water providers who may or may not be all of the water providers in the sub-basin. R18-16-406(D)(2) will be modified to ensure that all affected water providers will be consulted.

**Response:** R18-16-406(D)(2) is revised as follows:

2. Information regarding current and reasonably foreseeable uses of water for each segment of surface water impacted or threatened to be impacted by the release. This information shall be collected in consultation with affected water providers.

8. Impacted Land

**Comment:** Please define the term “impacted” in the last sentence of R18-16-406(D)(3).

**Analysis:** The term “impact” is used throughout the rules to mean an effect or influence. For example, in R18-16-301, notification may be provided in a manner sufficient to timely reach those who may be impacted (affected, influenced) by the information contained in the notice. This use of the word is within the normal, common use of the term.

In R18-16-406(D), “impact” is intended to have a broad meaning. At this stage of the remedial investigation, the Department is defining the nature, extent, and degree of the release. R18-16-406(D)(3) requires the collection of information regarding reasonably foreseeable uses of land that are or may be impacted by the release. The Department has not determined that the release has resulted in an unacceptable concentration of contaminants on the property or has impaired the use of property. If those determinations are made, the property would be, more properly described as “contaminated” and the use as “impaired.”

**Response:** No change to the rule.

9. Draft Remedial Investigation Report

**Comment:** Please define “sufficient” used in the first sentence of R18-16-406(F).

**Analysis:** The term “sufficient” is a general term used to ensure the collection of adequate information to characterize the site. This is supported by A.R.S. § 49-287.03(E) which requires that the remedial investigation “collect the data necessary to adequately characterize the site or the portion of the site for the purpose of developing and evaluating effective remediation alternatives....” Under R18-16-406(F), data and information collected is sufficient if it meets this statutory requirement.

**Response:** No change to the rule.

10. Reliance on Water Management Plans

**Comment:** The Department received several comments on the requirement in R18-16-406(I)(3) for remedial objectives to be generally consistent with the water management plans of water providers whose water supplies are or may be impaired by the contamination. One commenter indicated that water management plans are now an important part of planning new development and preserving or enhancing existing development, and review of these plans is critical to determine the appropriate remedy. As such, it is imperative to have remedial objectives that are generally consistent with the water management plans of all water producers whose water supplies may be impaired by the contamination.

In contrast, another commenter suggested that it is arbitrary to rely on only one interested party’s vision of future water uses to predict the reasonable and foreseeable future uses for waters of the state for the next 100 years. Predictions of future water uses can be influenced by so many diverse factors that reliance on the needs of one sector or interested party may be misplaced. Similarly, weighted reliance on water management plans that do not specifically consider the competing interests or influences of water use issues could inappropriately skew the outcome of the future reasonable uses of the water and the remedial objectives.

The commenter indicated that population and water use predictions may be unreliable for determining long range plans for the future uses of water. For example, population estimates for the year 2025 in the Tucson Active Management Area (AMA) have been revised downward from 1,693,000 people in the Second Management Plan to 1,266,500 in the Third Management Plan. If official projections of population growth or decline are difficult to predict for use in developing an AMA, it stands to reason that reliance on such data as a factor in any long term future use could be misguided.

The commenter also stated that laws affecting the future uses of water (i.e., the Endangered Species Act, the Clean Water Act, the National Environmental Protection Act, the Sonoran Desert Conservation Act, and the Safe Drinking Water Act, etc.) may possibly conflict or compete with the future uses of water outlined in a water provider’s water management plan. For example, new arsenic standards may exclude certain areas of groundwater or surface water from future use as drinking water. Or the pumping of groundwater in certain areas may lower the water table and have an adverse effect on a wildlife habitat or riparian area, thus affecting the future use of extracted groundwater. In addition, these laws can and do change on a regular basis, especially within 100 years, which affect the

proposed future uses of water as designated in a water provider's water management plan. For example, the repealed Water Consumer Protection Act had a direct effect on the future uses of water in the Tucson area.

Finally, the commenter believes that the rules dilute the Legislature's intent to relieve the restrictive nature of the past water remediation criteria. Current WQARF statutes clarify that cleanup need not always result in achievement of drinking water standards in the aquifer itself. However, the proposed rules diverge from this objective wherein it is strongly directed that water providers through their water management plans, are to be the guiding force in determining the current and future uses and the remedial objectives of water at a WQARF site. The language of the proposed rules favoring remedial objectives that coincide with the desires of water providers, for all intent and purpose, will likely return WQARF sites to the drinking water standards set forth under the old program.

**Analysis:** The Department agrees that it is crucial for the remedial objectives, and thus the remedy, to be generally consistent with the water management plans of all water producers whose water supplies may be impaired by the contamination. Water providers conduct extensive long range water resource planning to meet the assured water supply requirements, if applicable, and to meet their legal obligations to their customers. Water providers rely on these plans in planning new development, preserving or enhancing existing development, and managing large and complex treatment and distribution systems.

The Department disagrees that water providers are solely responsible for determining the current and future uses and the remedial objectives of water at a WQARF site under the rules. R18-16-406(I) requires the remedial objectives to be generally consistent with the water management plans of water providers whose water supplies are or may be impaired by the contamination. R18-16-406 also requires an extensive public process with all interested parties to determine uses of waters, including competing uses, and to identify proposed remedial objectives. The Department evaluates all of the information, including comments received on the water management plans, and prepares a list of proposed remedial objectives for additional public comment. Therefore, the Department relies on all interested parties to help determine remedial objectives for the site.

In regard to estimating future population and water uses, the Department agrees that it is difficult to predict well into the future. That is one of the reasons the Department specifies water management plans as a tool in the information collection and remedial objective process. Water providers are required to conduct long range water resource planning to meet assured water supply requirements and to meet the substantial legal obligations of their customers. In the event that the predictions prove to be inaccurate due to unforeseen circumstances or changes in regulatory requirements, R18-16-407(E) provides for contingent remedial strategies and measures to address uncertainties and A.R.S. § 49-289 provides for an record of decision to be amended.

The Department strongly disagrees that the rules do not meet the requirement in A.R.S. § 282.06(D) that specifies that a cleanup need not always result in the achievement of aquifer water standards in the aquifer itself. Quite to the contrary, the rule requires remedial objectives to be developed based on uses of the water and requires the selected remedy to meet the remedial objectives. This does not mean that the aquifer will always be cleaned up to aquifer water quality standards. Instead, the rules require different uses to be identified and require a remedy to be selected which will protect and provide for the uses. The method to protect or provide for the uses is determined in the feasibility study and may include such measures as replacement wells or well-head treatment.

**Response:** No change to the rule.

#### 11. Reliance on Land Use Plans

**Comment:** The requirement in R18-16-406(I)(3) for remedial objectives to be generally consistent with the general land use plan established by the local land use jurisdiction may be inappropriate. General land use plans may not always consider competing land use influences, such as conservation assessments or endangered species. General and municipal land use plans also typically set forth projections for land uses 5 to 20 years into the future. These predictions of future land uses are historically based upon population assumptions and may not be an accurate measurement in the long run. For example, the City of Florence was expected to be the major population center one hundred years ago.

Conflicting uses between adjacent government entities may also impede the future land use process. Generally, government land use plans account for future uses in a planning area up to six miles out of their own jurisdictional boundaries. Thus, these border cross-overs could lead to conflicting future land uses.

**Analysis:** The requirement for remedial objectives to be generally consistent with land use plans is intended to ensure that proposed land uses will not obviously interfere with land use plans of the local jurisdictions. R18-16-406 also requires an extensive public participation process with all interested parties to determine the uses, including competing uses, and to identify remedial objectives. The Department evaluates all of the information, including comments received on the land use plan, in the approval of the remedial objective.

**Response:** No change to the rule.

#### 12. Minimum Criteria for Water Management Plans

**Comment:** Since the proposed rules require the use of water management plans to develop remedial objectives, the rules should provide minimum criteria on what water management plans should be considered reasonable and reliable. Water management plans should be presented for public comment and formally adopted by the governing



body of the water provider. Otherwise, these rules will disenfranchise the public's right to influence water related decisions.

If the WQARF site is within an Active Management Area (AMA), the water management plan should also specify how the water provider has considered conservation measures and water rights in the AMA. Water providers are bound by the Groundwater Management Act (GMA) to employ one of four groundwater conservation measures and, if applicable, to further meet the demands of an assured water supply for future uses that involve the development of a new residential subdivision. A water provider who designates the future use of water as residential, agricultural or industrial should be able to offer support for these proposed uses under the GMA requirements. Thus, if the GMA is influential in a water providers water use decisions, the extraction of groundwater, including groundwater from a contaminated site, may not be a feasible or desired future use option.

**Analysis:** The Department agrees that criteria to evaluate water management plans would be beneficial. However, due to the differences in the complexity of water management plans and their process for approval, the Department believes that these issues would best be addressed in guidance. In addition, the extensive public participation required in the remedial objective process provides numerous opportunities for public comment.

**Response:** No change to the rule.

#### 13. Criteria for Remedial Objectives

**Comment:** The criteria for selecting remedial objectives in R18-16-406(I)(4) is insufficient in identifying types of risk exposure and associated objective standards. Although R18-16-406(D) specifies the sources to identify reasonably foreseeable uses for land and water, it does not provide guidelines to follow for developing a remedial objective once a reasonable use for the water or land has been established. Merely identifying vague, potential uses for the land or water is insufficient and ineffective in streamlining remediation efforts.

The remedial objectives should be based on specific legal guidelines already established for exposure to specific hazardous substances. The type of exposure should be determined considering the probable future uses of the land or water. The incorporation of specific and established standards for certain types of designated uses into the remedial objectives process is clearer and furthers the goal of self-implementation.

**Analysis:** The Department disagrees that remedial objectives should be based on specific legal guidelines already established for exposure to specific hazardous substances. One of the goals of Laws 1997, Chapter 287 is to provide for increased flexibility in the selection of water cleanup methods and levels. A.R.S. § 49-282.06 requires the Department to adopt rules for remedy selection that incorporate analysis of a range of cleanup alternatives, from plume remediation to no action. Furthermore, A.R.S. § 49-282.06(D) specifies that a cleanup need not always result in the achievement of aquifer water quality standards in the aquifer itself.

Instead of focusing on setting cleanup standards in the aquifer or surface water, the rules require remedial objectives to be developed based on uses of the water and requires that the selected remedy to meet the remedial objectives. R18-16-406(I)(4) provides the requirements for developing remedial objectives. The method to protect or provide for the uses is determined in the feasibility study. The Department believes that the remedial objective process established in R18-16-406 meets the requirements of A.R.S. § 49-282.06, provides flexibility in selecting remedies, and ensures that uses that are impaired by the contamination will be provided.

**Response:** No change to the rule.

#### 14. Time-frame for Remedial Objective Meeting

**Comment:** The Department's discretion in R18-16-406(I)(1) regarding the time-frame to hold a public meeting to establish remedial objectives should be subject to both a good cause requirement and approval by the community advisory board.

**Analysis:** The Department would likely consult with the CAB to set the date. However, A.R.S. § 49-289.03 specifies that the function of the community advisory board is advisory. The granting to the board of approval authority is not authorized in statute.

**Response:** No change to the rule.

#### 15. Remedial Objective Report

**Comment:** Instream flow should be considered as one of the beneficial uses of waters of the state in R18-16-406(I)(4).

**Analysis:** The Department agrees that instream flow is a beneficial use of waters of the state for the purpose of establishing remedial objectives under R18-16-406. The rule, as proposed, would allow for consideration of this use.

**Response:** No change to the rule.

#### 16. Additional Remedial Objective Public Meetings

**Comment:** R18-16-406(I)(5) should be revised as follows in order to be consistent with the provisions triggering public hearings in the aquifer protection permitting process:

5. The Department shall provide notice and accept and consider public comment on the proposed remedial objectives in the remedial objectives report and ~~may~~ shall hold at least 1 ~~or more~~ additional public meeting ~~depending upon the level of~~ if significant public interest exists or if significant issues or information have been brought to the attention of the Department which have not been considered previously.

**Analysis:** Although it is not clear that the process of establishing remedial objectives under R18-16-406 is so similar to the aquifer protection permitting process that consistency between the processes is a consideration, the Department believes that proposed language establishes a clearer standard for determining the need for a public meeting under R18-16-406(I)(5). The rule will be revised to adopt the proposed language.

**Response:** R18-16-406(I)(5) is revised as follows:

5. The Department shall provide notice and accept and consider public comment on the proposed remedial objectives in the remedial objectives report and shall hold at least 1 additional public meeting if significant public interest exists or if significant issues or information have been brought to the attention of the Department which have not been considered previously.

#### R18-16-407. Feasibility Study

##### 1. Material Not Subject to Soil Remediation Standards

**Comment:** The cleanup standards set forth in R18-16-407(D) addressing feasibility studies are somewhat confusing. What is meant by a material that is “not subject” to soil remediation standards (SRLs)? Does this mean a material that does not have a numeric default soil remediation level? Even materials without numeric default SRLs are “subject to” A.R.S. § 49-152, since site-specific risk based remediation levels can potentially be calculated for such substances pursuant to A.R.S. § 49-152(A)(2). Moreover, if containing material not subject to A.R.S. § 49-152 is a criterion for being subject to proposed subsection (D), why is the first cleanup level option in that subsection compliance with soil remediation levels established pursuant to the rules implementing A.R.S. § 49-152 (proposed A.A.C. R18-16-407(1))(1)(a))? The wording of this subsection should be clarified to make its intent more apparent.

**Analysis:** R18-16-407(D) deals with remedies that address materials in landfills which are not “soil” as that term is defined in R18-7-201(38) and are, therefore, not subject to the Soil Remediation Standards rules. R18-16-407(D)(1) adopts the soil remediation levels established under Title 18, Chapter 7, Article 2 as one measure of the potential of a proposed remedy to prevent human exposure to hazardous substances at landfills that have not and will not impact groundwater and that contain “non-soil” materials.

**Response:** No change to the rule.

##### 2. Approval of Site-Specific Remediation Levels

**Comment:** The excess lifetime cancer risk level in R18-16-407(D)(1)(b) should be approved by the community advisory board to address environmental justice considerations.

**Analysis:** The Department would likely consult with the CAB on environmental justice issues and discuss proposed site-specific remediation levels with them. However, A.R.S. § 49-289.03 specifies that the function of the community advisory board is advisory. The granting to the board of approval authority is not authorized in statute. The Department will retain approval of the site-specific remediation level and the rule will be revised to make that more clear.

**Response:** R18-16-407(D)(1)(b) is revised as follows:

b. Site-specific remediation levels based on a site-specific human health risk assessment, meeting a cumulative excess lifetime cancer risk between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$  and a hazard index no greater than 1. The excess lifetime cancer risk shall be selected by the Department based upon site specific factors including the presence of multiple contaminants, the existence of multiple pathways of exposure, the uncertainty of exposure, and the sensitivity of the exposed population. With prior approval of the Department, a person may achieve a site specific remediation level based on the use of institutional and engineering controls. The approval shall be based in part on the demonstration that the institutional and engineering controls will be maintained.

##### 3. Meeting Remedial Objectives

**Comment:** Requiring alternatives in R18-16-407 to meet the remedial objectives developed in R18-16-406 before it is even determined if it is cost-effective or technically feasible to achieve is premature and counterintuitive to a workable solution. Some of the remedial strategies outlined under R18-16-407(E), such as monitoring or no action, may be rendered meaningless if a “pie-in-the-sky” remedial objective is mandated to be met. R18-16-407 should follow the CERCLA process where remedial objectives and remedies are reviewed based on applicable, relevant, and appropriate requirements (ARARS), health risks, and cost/benefit analyses in order to better evaluate and select a remedy that is economical and technically feasible.

**Analysis:** Laws 1997, Chapter 287 represented a broad rejection of the CERCLA approach to remediation of contaminated sites in favor of an approach that was specifically tailored to work in Arizona. Many people felt that the selection of Maximum Contaminant Levels as cleanup goals under CERCLA (and old WQARF) resulted in aquifer restoration remedies which were not cost effective or technically feasible. They argued that requiring these goals to

be met within the aquifer limited the options available in the feasibility study and made the cost/benefit analysis essentially meaningless.

As a result, one of the major goals of Laws 1997, Chapter 287, is to provide for increased flexibility in the selection of water cleanup methods and levels. A.R.S. § 49-282.06 requires the Department to adopt a rules for remedy selection that incorporate analysis of a range of cleanup alternatives, from plume remediation to no action. A.R.S. § 49-282.06 also requires remedial actions to: 1) assure the protection of public health and welfare and the environment; 2) to the extent practicable, provide for the control, management or cleanup of the hazardous substances in order to allow for the maximum beneficial use of waters of the state; and 3) be reasonable, necessary, cost effective, and technically feasible. Furthermore, A.R.S. § 49-282.06(D) specifies that a cleanup need not always result in the achievement of aquifer water quality standards in the aquifer itself.

Instead of focusing on setting cleanup goals in the aquifer, the rules require remedial objectives to be developed based on uses of the water and requires that the selected remedy to meet the remedial objectives. This does not mean that the aquifer will always be cleaned up to aquifer water quality standards. Instead, the rules require different uses to be identified and a remedy is selected which will protect and provide for the uses.

The feasibility study process in R18-16-407 provides for a flexible process to develop alternatives which are capable of achieving remedial objectives. Each alternative consists of a combination of remedial strategies and measures. A strategy is one of six general remediation approaches listed in R18-16-407(F) to address contamination. Measures are specific actions taken to address land or water uses, such as replacement of a well or well-head treatment. Each alternative is compared to each other based on practicability, risk, cost, and benefit.

The Department believes that the processes established in R18-16-406 and R18-16-407 provide maximum flexibility in selecting remedies and meet the requirements of A.R.S. § 282.06. It is not premature to require remedial objectives to be met because the objectives are not based on regulatory standards and do not dictate remediation methods or technologies. The Department also believes that all of the remedial strategies described in R18-16-407(E) are viable because this rule does not set remedial objectives that are impossible to achieve. In fact, this rule is not limited to certain strategies in order meet goals set within the aquifer.

**Response:** No change to the rule.

#### 4. Feasibility Process

**Comment:** Focusing on technical feasibility, risk analysis, likely use of the impacted aquifer, and a potential blend of remedial alternatives is very enlightened. A stringent one-size-fits-all approach will not always be significantly more protective of human health and the environment than a well thought out site-specific approach that takes into account the factors identified above. A one-size-fits-all approach is often wasteful and inefficient as it potentially takes resources away from sites where these resources could be used to significantly protect human health and the environment. The rules strike a reasonable balance between protection of resources and real-life economic and technical factors.

**Analysis:** The Department agrees that the flexibility in the feasibility process required in R18-16-407 will result in remedies that are reasonable, necessary, cost-effective, technically practicable, and will provide the maximum beneficial uses of waters of the state.

**Response:** No change to the rule.

#### 5. Remedial Measures

**Comment:** Remedial measures identified in R18-16-407(G) should be subject to the approval of the water provider or well owner. In addition, financial mechanisms referenced in the last sentence should be specified as well as who should provide the mechanisms.

**Analysis:** Under R18-16-407(G), remedial measures are developed in consultation with affected water providers and well owners. Approval of remedial measures is a function of the Department in approving the feasibility study report.

In regard to financial mechanisms, the Department does not wish to limit the mechanisms used. A financial mechanism is appropriate if it provides for the costs of implementing the remedial measures as long as necessary to achieve remedial objectives. The financial mechanisms are provided by the Department or anyone implementing the remedy.

**Response:** No change to the rule.

#### 6. Residual Risk Evaluation

**Comment:** The phrase “residual risk in the aquifer” is not defined in R18-16-407(H)(3)(b)(v). Risk to whom or what and by what should be specified.

**Analysis:** R18-16-407(H)(3)(b) requires an evaluation of risk to public health and aquatic and terrestrial biota under reasonably foreseeable use scenarios and end uses of water. R18-16-407(H)(3)(b)(v) is a specific evaluation required under R18-16-407(H)(3)(b).

**Response:** No change to the rule.

R18-16-408. Proposed Remedial Action Plan

No comments were received on this Section.

R18-16-409. Remedial Action Costs Credit

1. Lack of Incentives for Working Parties

**Comment:** The provisions in the proposed rule that allow working parties in the present and future to conduct necessary remedial action work, from investigation to implementation, are essential. Working parties must be encouraged to continue to do this work in order for this program to succeed in the long term. The weakness of this rule is an absence of financial or other incentives for working parties.

**Analysis:** The Department agrees that it is critical to the success of the WQARF program for responsible parties, owners and operators, and any other working parties to conduct remedial actions at a site. This Section of the rules was developed to provide a mechanism for working parties get credit for the work they have done. While this may not be viewed as an incentive to conduct work, other incentives are provided, such as conducting early response actions to prevent the spreading of contamination and minimizing the cost to responsible parties. However, the Department agrees that additional incentives would be beneficial. The Department will continue to seek potential incentives and welcomes any suggestions.

**Response:** No change to the rule.

2. Additional Guidance Needed

**Comment:** Additional guidance is needed on the application of a credit against a working party's proportionate share of liability at a site.

**Analysis:** The Department agrees that guidance documents will be helpful in the implementation of the rules. The Department will be developing guidance in the future and will be soliciting comments from stakeholders as it is developed.

**Response:** No change to the rules.

3. Correction

**Comment:** The first sentence of R18-16-409(C) appears to be incomplete.

**Analysis:** The word "Section" was missing from the end of the sentence. The Department appreciates the correction.

**Response:** R18-16-409(C) is revised as follows:

C. Within a reasonable period of time set by the Department but not less than 30 calendar days, any person may object in writing to costs submitted by the Department or any other person under this Section. Written objections shall identify the specific costs to which the party objects and shall state specific reasons for the objection. Two copies of the objections shall be submitted to the Department and one copy of the objections shall be submitted to the person whose costs are the subject of objection.

4. Reimbursement Conflicts with Statute

**Comment:** What is the process to resolve any potential conflicts with the rules and the statute? For example, the statute does not provide for reimbursement.

**Analysis:** The Department has evaluated the rules to determine any potential conflicts with the statutes and does not believe any exist. If any conflicts are identified by the Attorney General while reviewing the rules for approval as required by Laws 1997, Chapter 287, the conflicts will be resolved before approval of the rules.

While it is true that the statutes do not provide for reimbursement, there is no provision in the rules for reimbursement. To eliminate any possible misunderstanding in regard to reimbursement, however, the second sentence in R18-16-409(G) is being amended to apply to the Article as a whole.

**Response:** R18-16-409(G) is amended as follows:

G. The Department shall give credit up to the amount of a person's liability for the costs approved under this Section. Nothing in this Article shall create a right of reimbursement from the fund for any costs incurred or to be incurred at a site.

R18-16-410. Record of Decision

No comments were received on this Section.

R18-16-411. Design, Implementation, Operation and Maintenance of the Early Response Action or Remedy

1. Water Providers Discretion for Design, Construction, and Operation

**Comment:** Water providers should have the sole discretion to design and construct any remedial system that will be serving their customers rather than the work being completed by the responsible party or ADEQ.

**Analysis:** The Department agrees that a water provider whose water use is being addressed should have the sole discretion, to construct, operate, or construct and operate the water treatment, well replacement or alternative water supply component of the remedy or early response action which is designed to address its use. R18-16-411(G) already provides for that discretion. The Department or the person developing the design must consult with the water provider in the design of the system, however, the Department must retain approval of the design of the remedy or early response action.

**Response:** No change to the rule.

## 2. Approval By Water Provider of Well Replacement or Alternative Water Supply

**Comment:** The design of a remedy or early response action that includes well replacement or provision of an alternative water supply should be subject to the approval of the water provider or well owner. In addition, the remedy or early response action should meet not only the water provider's water quality and quantity needs, it should meet their system engineering needs.

**Analysis:** Under R18-16-411(B), the design of a remedy or early response action that includes well replacement or provision of an alternative water supply is developed in consultation with affected water providers and well owners. Approval of the design is a function of the Department under R18-16-411(F). In addition, R18-16-411(B)(2) already provides for the water provider's system engineering needs.

**Response:** No change to the rule.

### R18-16-412. Innovative Technologies

#### 1. Review of Innovative Technology

**Comment:** The word "outside" as used in R18-16-412(B) should be clarified.

**Analysis:** R18-16-412(B) authorizes the Department to use WQARF fund money to obtain the services of an independent consultant to review the proposed or actual use of an innovative technology. The word "outside" serves no function in the sentence and will be deleted.

**Response:** R18-16-412(B) is revised as follows:

**B.** The Department may use monies from the WQARF fund to contract for review of the innovative technology.

### R18-16-413. Approval of Remedial Actions Under A.R.S. § 49-285(B)

#### 1. 2 Options for Approvals Under A.R.S. § 49-285(B)

**Comment:** The Department received one comment in support of Option 1 and one comment in support of Option 2. The comment in favor of Option 2 did not provide any basis for that support. However, the comment in support of Option 1 indicated that it seems to be much more consistent with the remainder of the rules because most of the proposed rules relate only to sites or the registry. The commenter noted that it appears that Option 2 was simply added in after the remainder of the rule proposal was drafted. The commenter also indicated that the following provisions in Option 2 are all quite vague and will likely lead to disputes between the entity conducting remediation and the Department: 1) the "substantially similar to the activities that would be required under this Article" provision in R18-16-413(A)(4)(c)(i) for community involvement activities; 2) the "substantially equivalent of the type of investigation that would be required under this Article" provision in R18-16-413(A)(4)(c)(ii) for site characterization and other investigations; and 3) the "in substantial compliance with this Article" provision in R18-16-413(A)(4)(c)(iii) for remedial actions that include remediation.

**Analysis:** The Department agrees that the language in Option 2 is vague and will lead to disputes. The Department is also concerned that it will take an inordinate amount of time to make a determination under this language. Most important, ADEQ is concerned that it may not be able to approve remedial actions under other laws as proposed in Option 2, such as corrective actions under the Resource Conservation and Recovery Act without jeopardizing ADEQ's delegation to administer the hazardous waste program in lieu of the Environmental Protection Agency.

For these reasons, the Department has decided to proceed with Option 1 which limits approval to remedial actions at WQARF registry sites.

**Response:** Option 2 has been deleted.

### R18-16-414. Determination of No Further Action

#### 1. Surface Water Determinations

**Comment:** What is the basis for making a no further action determination for surface water under proposed R18-16-414(A)(3)? As written, the only basis (other than remediation under another program) for issuing a no further action determination for surface water appears to be that there is no current or reasonably foreseeable uses of water that would be impaired by the release of hazardous substances. Does meeting applicable surface water quality stan-

dards meet this criterion? If not, why not? ADEQ should provide further explanation of how it intends no further action determinations to be made with respect to surface water.

**Analysis:** The Department unintentionally omitted surface water in R18-16-414(A)(3).

**Response:** R18-16-414(A)(3) is revised as follows:

3. A finding that water impacted by a release from the site does not and will not exceed water quality standards in Title 18, Chapter 11 or if there is no standard in Title 18, Chapter 11, a risk level approved by the Department to protect public health, welfare, and the environment.
2. Notification of No Further Action Determinations

**Comment:** A no further action determination is analogous to closure of a site and should not be determined outside of the public process. R18-16-414(A) should be amended to include notification of the community advisory board, local government agencies, local council of governments, affected water providers, and the Arizona Department of Water Resources. In addition, the determination should be approved by the site's community advisory board.

**Analysis:** The questions of notice and approval of a request for a no further action determination are addressed in A.R.S. § 49-287.01(F). The statute requires the Department to publish notice and provide a 30 day comment period prior to approving a request for a no further action determination. When the Department is ready to make a determination, the community advisory board will likely be consulted. However, the decision to approve or deny the request is made by the Department according to the statute.

**Response:** No change to the rule.

#### R18-16-415. Soil Remediation

##### Additional Guidance Needed

**Comment:** Additional guidance is needed on coordinating discrete soil cleanups within a larger WQARF site.

**Analysis:** The Department agrees that guidance documents will be helpful in the implementation of the rules. The Department will be developing guidance in the future and will be soliciting comments from stakeholders as it is developed.

**Response:** No change to the rules.

#### R18-16-416. Satisfaction of Settlement Agreement and Achievement of Remedial Objectives

**Comment:** The term "material" should be clarified in R18-16-416(C)(1).

**Analysis:** The term "material" is not needed in R18-16-416(C)(1) and will be deleted.

**Response:** R18-16-416(C)(1) is revised as follows:

1. On discovery of new information which would result in the potential denial of a determination under subsection (B).

#### INTERIM REMEDIAL ACTIONS

##### General Comments

**Comment:** The provisions for interim remedial action are properly focused and limited to those situations where they are needed.

**Analysis:** The Department agrees that interim remedial actions may be needed in limited circumstances where there is insufficient information about the site to determine whether an early response action would be appropriate. The Department believes that this rule addresses these circumstances appropriately.

**Response:** No change to the rule.

#### R18-16-501. Definitions

**Comment:** The definition of "abandoned" should be revised to read, "... a well that has been permanently sealed or closed with cement or a cement-bentonite mixture that cannot be re-entered except by redrilling the wellbore, ~~or a well~~ and that has been formally abandoned ~~under~~ according to R12-15-816."

**Analysis:** The Department disagrees with the suggested change. Some wells were abandoned prior to the adoption of R12-15-816 and should not be eligible for the funding or performance of an interim remedial action. Wells should be ineligible for funding or performance of an interim remedial action if the wells were abandoned prior to the adoption of R12-15-816 or were abandoned following the requirements of R12-15-816 after its adoption.

**Response:** No change to the rule.

#### R18-16-502. Eligibility

1. Eligibility

**Comment:** The first sentence of R18-6-502(A) is unclear and should be revised to read, "A well owner or operator is eligible for consideration for funding..."

**Analysis:** The Department disagrees with the suggested change. Any person may request funding or performance of an interim remedial action under R18-16-503(A). R18-16-502(A) specifies the types of wells that would be eligible.

**Response:** No change to the rule.

2. Reimbursement of Prior Costs

**Comment:** The last sentence of R18-16-502(B), "Costs incurred by any person prior to the submittal of a request under R18-16-503 are not reimbursable by the Department" should be deleted.

**Analysis:** This provision is required pursuant to A.R.S. § 49-282.03(B).

**Response:** No change to the rule:

R18-16-504. Review and Approval of Requests for Interim Remedial Actions

1. Criteria for Review and Approval; Contaminated Wells

**Comment:** R18-16-504(A)(3) should be simplified to read, "Whether the well is currently contaminated, and whether there are uses or planned uses for the well."

**Analysis:** Interim remedial actions are intended to be taken in limited circumstances to address water supply problems resulting from WQARF contamination where a rapid solution is needed and there is insufficient information about the site to determine whether an early response action is appropriate. Therefore, some planned uses of the well may be best addressed through an early response action or the final remedy for the site. R18-16-504(A)(3) provides for the Department to evaluate the needs that would be addressed by the well but for the contamination, and: 1) approve the request for an interim remedial action; 2) request modifications to the proposal; or 3) deny the request and address the well through an early response action or the final remedy for the site.

**Response:** No change to the rule.

2. Criteria for Review and Approval; Critical Need

**Comment:** Whether a well is "critical" to its owner or operator should not be a factor ADEQ uses in R18-16-504(A)(4) to approve or deny requests for interim remedial actions. A well that has been contaminated is a capital resource that has been "taken" by the party responsible for the contamination. Therefore, this subsection should be deleted and replaced by a statement that a "taking" will not be allowed.

**Analysis:** As stated in the previous answer, interim remedial actions are intended to be taken in limited circumstances. While it is arguable that a well that has been contaminated is a resource that has been "taken" by the party responsible for the contamination, the "taking" is not a factor that is relevant to the Department's decision to perform or fund an interim remedial action. It may be more appropriate to address wells contaminated by a release of hazardous substances from a registry site through an early response action or the final remedy for the site. R18-16-504(A)(4) provides for the Department to evaluate whether a well is critical to the ability of the well to satisfy the water supply needs of its users and: 1) approve the request for an interim remedial action; 2) request modifications to the proposal; or 3) deny the request and address the well through an early response action or the final remedy for the site.

**Response:** No change to the rule.

3. Additional Guidance Needed

**Comment:** Additional guidance is needed on the evaluation of proposals for interim remedial actions.

**Analysis:** The Department agrees that guidance documents will be helpful in the implementation of the rules. The Department will be developing guidance in the future and will be soliciting comments from stakeholders as it is developed.

**Response:** No change to the rules.

**12. Any other matters prescribed by statute that are applicable to the specific agency or any specific rule or class of rules:**

None

**13. Incorporations by reference and their location in the rules:**

The Eligibility and Evaluation Site Scoring Model as established by the Arizona Department of Environmental Quality on October 3, 1996 is incorporated by reference in R18-16-202. This incorporation by reference contains no further editions or amendments of the Model. Copies of the Model may be obtained by from the Arizona Department of Environmental Quality, 3033 North Central Avenue, Phoenix, Arizona 85012-2809.

**14. Was this rule previously adopted as an emergency rule?**

No

**15. The full text of the rules follows:**

**TITLE 18. ENVIRONMENTAL QUALITY**

**CHAPTER 16. ~~RESERVED~~ DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY ASSURANCE REVOLVING FUND PROGRAM**

**ARTICLE 2. PRELIMINARY INVESTIGATIONS AND SITE SCORING**

Section

R18-16-201. Preliminary Investigations

R18-16-202. Site Scoring

**ARTICLE 3. PUBLIC INFORMATION**

Section

R18-16-301. Public Notification and Opportunities for Public Comment

R18-16-302. Location of Information Repositories

**ARTICLE 4. REMEDY SELECTION**

Section

R18-16-401. Definitions

R18-16-402. Applicability

R18-16-403. Scope of Work, Fact sheet, Outline of Community Involvement Plan, and Notification of Availability

R18-16-404. Community Involvement Requirements

R18-16-405. Early Response Actions

R18-16-406. Remedial Investigations

R18-16-407. Feasibility Study

R18-16-408. Proposed Remedial Action Plan

R18-16-409. Remedial Action Costs Credit

R18-16-410. Record of Decision

R18-16-411. Design, Implementation, Operation and Maintenance of the Early Response Action or Remedy

R18-16-412. Innovative Technologies

R18-16-413. Approval of Remedial Actions Under A.R.S. § 49-285(B)

R18-16-414. Determination of No Further Action

R18-16-415. Soil Remediation

R18-16-416. Satisfaction of Settlement Agreement and Achievement of Remedial Objectives

Appendix A. Standard Measurements for Comparison of Remedial Alternatives

**ARTICLE 5. INTERIM REMEDIAL ACTIONS**

Section

R18-16-501. Definitions

R18-16-502. Eligibility

R18-16-503. Request for Interim Remedial Action

R18-16-504. Review and Approval of Requests for Interim Remedial Action

R18-16-505. Reimbursement

**ARTICLE 2. PRELIMINARY INVESTIGATIONS AND SITE SCORING**

**R-18-16-201. Preliminary Investigations**

- A.** Based on information of a possible release or threatened release of a hazardous substance, the Department may conduct a preliminary investigation to obtain additional information necessary to determine the potential risk to public health, welfare, and the environment in order to score the site and include it on the registry established under A.R.S. § 49-287.01(D).
- B.** Before conducting a preliminary investigation, the Department shall consider whether the possible release or threatened release of a hazardous substance:
1. Is being addressed by or should be referred to another applicable program administered by the Department or another federal, state or local governmental agency with jurisdiction over the matter; or
  2. Is being adequately addressed through voluntary action.
- C.** At any time before or during a preliminary investigation, if the Department determines that a possible release or threatened release of a hazardous substance is being adequately addressed by another program or agency or voluntarily, the Department may suspend or terminate a preliminary investigation under this Section.



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- D.** A preliminary investigation is a screening level investigation based primarily upon existing information. The Department may collect existing information regarding a release or threatened release of a hazardous substance from any appropriate source, including Department programs, governmental agencies, water providers, complainants, and owners and operators of facilities where the release may have occurred. When existing information, such as soil or water sampling data, cannot be validated, or when sufficient data does not exist, additional data may be collected as necessary.
- E.** The Department shall terminate the preliminary investigation prior to completion if:
1. The Department determines that the release of a hazardous substance has not occurred and is not likely to occur; or
  2. The Department determines:
    - a. Based on valid sampling data, that soil contaminated by a release of a hazardous substance meets the requirements of A.R.S. § 49-152 and 18 A.A.C. 7, Article 2; and
    - b. Based on valid sampling data, that the release or a threatened release of a hazardous substance does not and will not result in an exceedance of water quality standards, or if there is no water quality standard, a risk level approved by the Department to protect public health, welfare, and the environment.
- F.** The Department shall notify affected water providers of the termination of a preliminary investigation under R18-16-201(E).
- G.** If the Department does not terminate or suspend a preliminary investigation under subsections (C) or (E), the Department shall proceed with the preliminary investigation by collecting any additional information necessary to score a potential site using the eligibility and evaluation site scoring model under R18-16-202. The Department shall notify affected water providers and affected local governments of the initiation of the preliminary investigation. A work plan shall be developed and implemented to collect additional information and shall include the following information:
1. The location and description of the potential site, including a map.
  2. A list of hazardous substances known or suspected to have been released.
  3. A proposal to search available records to determine:
    - a. The historic and current uses of facilities within the potential site.
    - b. The physical and environmental conditions within the potential site.
    - c. Any previous environmental investigations or regulatory involvement by federal, state, or local authorities.
  4. A proposal to obtain information from any affected water providers.
- H.** If the Department determines that additional information is necessary to score a potential site using the eligibility and evaluation site scoring model under R18-16-202, the work plan shall be supplemented with the following information:
1. A conceptual site model to determine:
    - a. Potential sources of contamination.
    - b. Potential exposure pathways.
    - c. Potential human, aquatic, and terrestrial receptors.
  2. If sampling is necessary, the work plan shall contain the following information:
    - a. The objectives of the sampling.
    - b. A quality assurance project plan.
    - c. A sampling and analysis plan to verify whether a suspected release has occurred, and if the release has occurred, to adequately characterize the release to score the site using the eligibility and evaluation site scoring model.
    - d. A health and safety plan consistent with 29 CFR, 1910.120.
- I.** Following completion of the preliminary investigation, a preliminary investigation report shall be prepared. The report shall contain the following information:
1. Information gathered and reviewed under subsection (G), including a summary of the information with references to relevant reports.
  2. If applicable, the conceptual site model developed under subsection (H).
  3. If sampling was conducted under subsection (H):
    - a. A description of the sampling activities.
    - b. Analytical results including a summary of the results with references to relevant reports.
    - c. A map of sample locations.
    - d. Data quality information including a summary with references to relevant reports.
- J.** The Department shall approve the preliminary investigation report prepared under subsection (I) if it contains sufficient valid information to score the site using the eligibility and evaluation site scoring model under R18-16-202 or to make a determination that no further investigation or action is needed under subsection (K).
- K.** Based on a review of the preliminary investigation report prepared under subsection (I), the Department shall:
1. Determine that no further investigation or action is needed using the criteria in subsection (E); or
  2. Prepare a draft site registry report under A.R.S. § 49-287.01(B).
- L.** The Department may allow any person to conduct any part of the preliminary investigation by written agreement. A person requesting to conduct all or any part of a preliminary investigation shall submit a written request to the Department that includes the following information:

1. The name and address of the person making the request and the nature of the relationship of the person to the site.
2. The portion of the preliminary investigation the person wants to conduct.
3. A work plan to conduct the preliminary investigation in accordance with subsection (G).
4. A schedule for completion of the activities specified in the work plan.
5. If requested by the Department, information regarding the financial capability of the person to conduct the work plan.

**R18-16-202. Site Scoring**

In order to score a site or portion of a site, the Department shall use the eligibility and evaluation site scoring model established by the Department on October 3, 1996. The eligibility and evaluation site scoring model as established on October 3, 1996, is incorporated by reference. This incorporation by reference does not include any later amendments or editions. A copy of the incorporated material is available for inspection and reproduction at the Arizona Department of Environmental Quality, 3033 North Central Avenue, Phoenix, Arizona 85012-2809 and the Office of the Secretary of State. A copy of the incorporated material can be obtained from the Arizona Department of Environmental Quality, 3033 North Central Avenue, Phoenix, Arizona 85012-2809.

**ARTICLE 3. PUBLIC INFORMATION**

**R18-16-301. Public Notification and Opportunities for Public Comment**

- A.** If notification by publication in a newspaper is required by A.R.S. Title 49, Chapter 2, Article 5 or by any community involvement plan created under A.R.S. § 49-287.03 and A.R.S. Title 49, Chapter 2, Article 5 does not specify the frequency of the notification, the Department or person publishing notice shall publish notice according to the following minimum requirements:
1. One day in a daily newspaper of general circulation in the county where the site is located; or
  2. If other than a daily newspaper, two days in a newspaper of general circulation in the county where the site is located.
- B.** If notification by direct mail is required by A.R.S. Title 49, Chapter 2, Article 5 or by any community involvement plan created under A.R.S. § 49-287.03 and A.R.S. Title 49, Chapter 2, Article 5 does not specify the form of the mailing, the Department or person providing the notification shall provide the notification according to the following requirements:
1. By bulk or first-class mailing; or
  2. If the bulk or first-class mailing would cause unreasonable delay in receiving time-sensitive materials, the Department or person shall provide the notification in a manner sufficient to timely reach those who may be impacted.
- C.** If an opportunity for public comment is required by A.R.S. Title 49, Chapter 2, Article 5 or by any community involvement plan under § A.R.S. 49-287.03 and A.R.S. Title 49, Chapter 2, Article 5 does not specify the duration during which the public may comment, the Department or person providing the opportunity for public comment shall provide at least 30 calendar days for public comment.
- D.** The requirements of this Section shall not prevent or delay a timely remedial action that the Director has determined is necessary to address the release or threat of release of a hazardous substance that may present an immediate danger to public health, welfare, or the environment.

**R18-16-302. Location of Information Repositories**

Public information repositories required or authorized under A.R.S. Title 49, Chapter 2, Article 5 shall be located in at least one of the following areas:

1. An office of the Department.
2. A public or semi-public facility to which the public has reasonable access that is substantially equivalent to the access to the public information repository that is provided by the Department.
3. A private facility to which the public has reasonable access that is substantially equivalent to the access to the public information repository that is provided by the Department.

**ARTICLE 4. REMEDY SELECTION**

**R18-16-401. Definitions**

The following definitions shall apply in this Article, unless the context otherwise requires:

“Alternative remedy” means a combination of remedial strategies and remedial measures different from the reference remedy that is capable of achieving remedial objectives. The alternative remedies are compared with the reference remedy for purposes of selecting a proposed remedy at the conclusion of the feasibility study.

“Comparison criteria” means risk, cost, benefit, and practicability, as those terms are described in R18-16-407(H)(3).

“Community involvement area” has the same meaning as defined in A.R.S. § 49-281(3).

“Contaminant of concern” means a hazardous substance that results from a release and that has been identified by the Department as the subject of remedial action at a site.

“Hazardous substances” has the same meaning as in A.R.S. § 49-281(8).

“Nonrecoverable costs” has the same meaning as in A.R.S. § 49-281(9).

“Proposed remedy” means a combination of remedial strategies and remedial measures which, as a whole, is capable of achieving remedial objectives that is identified at the conclusion of a feasibility study and is incorporated in the proposed remedial action plan.

“Reference remedy” means a combination of remedial strategies and remedial measures which, as a whole, is capable of achieving remedial objectives. The reference remedy is compared with the alternative remedies for purposes of selecting a proposed remedy at the conclusion of the feasibility study.

“Remedial measure” means a specific action taken in conjunction with remedial strategies as part of the remedy to achieve one or more of the remedial objectives. For example, remedial measures may include well replacement, well modification, water treatment, provision of replacement water supplies, and engineering controls.

“Remedial objective” means the goal, as established through the process in R18-16-406, to be achieved by a remedy selected under this Article. Remedial objectives include the following elements:

Protecting against the loss or impairment of identified uses of land and waters of the state;

Restoring, replacing, or otherwise providing for identified uses of land and waters of the state;

Time-frames when action is needed to protect against or provide for the impairment or loss of the use; and

The projected duration of the action needed to protect or provide for the use.

“Remedial strategy” means one or a combination of the six general approaches described in R18-16-407(F) which may be employed in conjunction with remedial measures as part of the remedy to achieve the remedial objectives.

“Remedy” has the same meaning as in A.R.S. § 49-281(13).

“Site-specific human health risk assessment” means a scientific evaluation of the probability of an adverse effect to human health from exposure to specific types and concentrations of contaminants at or from a site. A site-specific human health risk assessment contains four components: identification of potential contaminants; an exposure assessment; a toxicity assessment; and a risk characterization.

“Site registry” or “registry” means the registry of scored sites maintained by the Department under A.R.S. § 49-287.01(D).

“Vadose zone” has the same meaning as in A.R.S. § 49-201(39).

“Water provider” means the owner or operator of a public water system, an agricultural improvement district, or an irrigation and water conservation district.

#### **R18-16-402. Applicability**

**A.** This Article applies to sites on the site registry and as otherwise made applicable by law.

**B.** This Article applies only to remedial actions as defined in A.R.S. § 49-281. Nothing in this Article is intended to require a remedial action, including a remedy or early response action, to provide for or cover any costs that a property owner, a well owner, or water provider would incur if the release of hazardous substances that is the subject of the remedial action had not affected the property or water supply of the property owner, well owner or water provider. A property owner, well owner or water provider shall not be required to provide reimbursement for coincidental benefits resulting from a remedial action otherwise necessary and appropriate to address a release or threatened release of a hazardous substance. Nothing in this Article shall be interpreted to require remedial action to address a land use that is impaired by properties of materials located on or under that land other than the current or potential exposure to hazardous substances contained in that material.

**C.** For purposes of this Section, “transition site” means a site that is on the site registry where some remedial action has occurred prior to the effective date of this Article.

**D.** Any person who has performed any remedial action prior to the effective date of this Article at a transition site may submit a written request for the Department’s approval of the remedial action under R18-16-413 if the remedial action has not been approved by the Department prior to the effective date of this Article. The request shall include a description of the remedial action, a demonstration that the work is reasonable and necessary and meets the applicable purposes of this Article, and copies of all documentation of the remedial action for which approval is requested. The Department shall approve:

**1.** Remedial investigation work performed prior to the effective date of this Article if the work meets the applicable purposes stated in R18-16-406(A).

**2.** Feasibility study work performed prior to the effective date of this Article if the work meets the purposes stated in R18-16-407(A), and

**3.** Early response action work performed prior to the effective date of this Article if the work meets the purposes stated in R18-16-405(A).

- E.** Remedial action work approved by the Department prior to the effective date of this Article shall be deemed approved for purposes of this Article. Remedial action work conducted under a work plan approved by the Department prior to the effective date of this Article shall be evaluated for approval by the Department under the terms of the approved work plan.
- F.** Notwithstanding subsections (D) and (E), neither a remedial investigation nor a feasibility study shall be considered complete under this Article until the information described in R18-16-406(D) is collected, a draft remedial investigation report is prepared and distributed under R18-16-406(F), and remedial objectives are selected under R18-16-406(I) and reported under R18-16-406(J). Thereafter, the procedures set forth in R18-16-407 through R18-16-412 shall apply to the selection of a remedy based upon the remedial investigation or feasibility study. To the extent that any of the alternative remedies discussed in a feasibility study that is substantially complete before the effective date of this Article will not achieve the remedial objectives, the feasibility study shall be modified so that the alternative remedies achieve remedial objectives. Additional evaluation of alternative remedies, if necessary, shall be conducted in accordance with R18-16-407 and reported in a supplemental report before preparation of a final feasibility study report under R18-16-407(I).
- G.** Notwithstanding anything to the contrary in this Article, this Article shall not apply to certain remedial action plans, written agreements, and court decrees or judgements approved, made or entered prior to the effective date of this Article as follows:
- 1.** If prior to the effective date of this Article, the Department has approved a remedial action plan or entered into a written agreement for work under Title 49, Chapter 2, Article 5, Arizona Revised Statutes, that includes the implementation of a remedy or the substantial equivalent of a remedy for a site or a portion of a site, the terms and conditions of the Department's approval or agreement, and not this Article, shall govern work within the scope of the approved remedial action plan or agreement and any modification thereto.
  - 2.** The terms and conditions of any court decree or judgement entered prior to the effective date of this Article, and not this Article, shall govern the work that is within the scope of the court decree and any modification thereto. If the work required by the court decree or judgement does not include the implementation of a remedy or the substantial equivalent of a remedy at a site or a portion of a site, then the selection of a remedy for the site or portion of the site shall be under this Article, and this Article may require additional remedial actions before a remedy can be selected, but a party to the consent decree shall not be required to conduct or pay for the additional remedial actions if the liability of the party is resolved by the court decree.
  - 3.** If an approval, agreement, court decree or judgement subject to subsection (G)(1) or (2) addresses only a portion of a site on the site registry and includes the implementation of a remedy or the substantial equivalent of a remedy for that portion of the site, then the work covered by the approval, agreement or decree shall be included as part of the remedial action plan and the record of decision selecting a remedy under this Article for the remainder of the site if agreed to by the parties to the approval, agreement, court decree or judgement.

**R18-16-403. Scope of Work, Fact Sheet, Outline of the Community Involvement Plan, and Notification of Availability**

- A.** Unless the Department determines that the necessary remedy at a site can be completed within 180 calendar days, the Department shall prepare a scope of work for the remedial investigation and feasibility study, a fact sheet, and an outline of a community involvement plan for the site before the Department conducts a remedial investigation and feasibility study under A.R.S. § 49-287.03.
- B.** The scope of work for a remedial investigation shall generally describe the extent of the remedial investigation based upon site-specific conditions and information obtained from the preliminary investigation. The scope of work for a remedial investigation shall provide for the preparation of the following, as applicable:
- 1.** Characterization of soil and vadose zone contamination, including identification of sources;
  - 2.** Characterization of groundwater contamination, including identification of sources;
  - 3.** Characterization of surface water contamination, including identification of sources;
  - 4.** Identification of actual and potential human and ecological receptors;
  - 5.** Identification of current and reasonably foreseeable uses of waters of the state that have been or are threatened to be impaired;
  - 6.** Identification of current and reasonably foreseeable land uses that have been or are threatened to be impaired;
  - 7.** Assessment of current risk to public health;
  - 8.** Assessment of ecological risk;
- C.** The scope of work for a feasibility study shall generally describe the process for conducting the feasibility study as prescribed in R18-16-407, and may specify additional work to be performed taking into account the information gathered in the remedial investigation.
- D.** The fact sheet shall include, at a minimum, all of the following:
- 1.** A brief history of the site;
  - 2.** A general description of the results of the preliminary investigation, including the known extent of contamination;
  - 3.** The site's score determined under R18-16-202;
  - 4.** General information regarding the potential risk of and routes of exposure to the contaminants at the site; and

5. The Department personnel to be contacted for further information regarding the site.
- E.** The outline of a community involvement plan shall generally describe the activities which will be included in the community involvement plan as required by A.R.S. § 49-289.03 and R18-16-404(C).
- F.** The Department shall provide written notice of the availability of the scope of work, the fact sheet, and the outline of the community involvement plan as required under A.R.S. § 49-287.03(C) to each person who, according to information available to the Department, may be liable for remedial actions. The notice shall state that any person, by written agreement with the Department may develop and implement a remedial investigation work plan or a feasibility study work plan for a site or a portion of a site under R18-16-406 or R18-16-407. The notice shall be provided in accordance with R18-16-301.
- G.** The Department shall publish the newspaper notice required by A.R.S. § 49-287.03(C) and shall provide written notice by mail or other delivery to residents, owners or operators of facilities being investigated, commercial occupants, affected water providers and owners of known wells within the community involvement area of the availability of the scope of work, the fact sheet, and the outline of the community involvement plan. These notices shall comply with R18-16-301. These notices shall also provide an opportunity for a public meeting. If the remedial investigation is being performed within one year of the scoring of the site under A.R.S. § 49-287.01, the notices required by this Section may be combined with the notice required by A.R.S. § 49-289.02.
- H.** Before implementing a work plan for a remedial investigation or feasibility study, the Department shall prepare a responsiveness summary addressing any public comments on the scope of work as required under A.R.S. § 49-287.03(D).
- I.** Community involvement under this Article shall comply with Article 3 of this Chapter, except that the community involvement plan may provide for additional requirements.

**R18-16-404. Community Involvement Requirements**

- A.** The Department or any person who conducts remedial action work at a site on the registry shall conduct community involvement activities in accordance with the requirements of this Section.
- B.** If the Department has prepared a community involvement plan under subsection (C) or adopted a plan under subsection (D)(1), the Department or any person conducting remedial action work at a site on the registry shall conduct community involvement activities at the site according to the community involvement plan. If the Department has issued a notice under A.R.S. § 49-287.03 for a site, a person may conduct community involvement activities only under a written agreement with the Department. However, a person who submits a notice of remediation under R18-16-415(A) may conduct community involvement activities for the soil remediation described in the notice according to the community involvement plan prepared or adopted by the Department for the site without a written agreement.
- C.** Unless the Department determines that the necessary remedy at a site can be completed within 180 calendar days, the Department shall prepare and implement a community involvement plan prior to initiating or approving a work plan to implement the remedial investigation or a feasibility study under A.R.S. § 49-287.03. The community involvement plan shall:
- 1.** Be updated annually and shall provide information, if applicable, regarding the establishment of a selection committee and community advisory board. The plan also shall provide for the following required activities:
    - a.** Notification to interested persons of the availability of the work plan developed under R18-16-406(B) to implement the remedial investigation and the solicitation of information from interested persons under R18-16-406(D) regarding the current and reasonably foreseeable uses of the land and waters of the state.
    - b.** Notice to the public of the opportunity to comment on the draft remedial investigation report developed under R18-16-406(F) and public meetings to establish remedial objectives under R18-16-406(I).
    - c.** Notice to the public of the opportunity to comment on remedial objectives proposed under R18-16-406(I)(5) and the availability of the final report prepared by the Department under R18-16-406(J).
    - d.** Notification to interested persons of the availability of the work plan developed under R18-16-407(B) to implement the feasibility study.
    - e.** Notice to the public and notification to interested persons of the availability of the proposed remedial action plan prepared under R18-16-408(A) and of the opportunity to comment on the proposed remedial action plan.
    - f.** Notice to the public of the availability of the record of decision and responsiveness summary prepared by the Department under R18-16-410.
    - g.** Notice to the public and notification to interested persons of availability of and opportunity to comment on the operation and maintenance plan prepared under R18-16-411(E).
    - h.** Notice to the public and notification to interested persons of a request for approval of work under R18-16-413.
    - i.** Newsletters to be distributed to residents and interested persons regarding the status of the remedial action and other pertinent information.
    - j.** Notice within the community involvement area regarding public meetings to provide and discuss information regarding sites on the registry.
    - k.** The location of and types of information contained in a public document repository.
    - l.** Notice to the public and notification to interested persons of a request for a waiver under A.R.S. § 49-290.

- ### **R18-16-405. Early Response Actions**

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4. Control or contain contamination where such actions are expected to reduce the scope or cost of the remedy needed at the site.
- B. The method or technology used to implement the early response action shall be selected based upon best engineering, geological, or hydrogeological judgment following engineering, geological, or hydrogeological standards of practice, considering the following information:
  1. Best available information characterizing the site;
  2. Best available scientific information concerning available remedial methods and technologies; and
  3. Best available information regarding whether the technology or method could increase the scope or costs of possible remedies for the site or result in increased risk to public health or welfare or the environment.
- C. A written rationale shall be prepared for each early response action explaining how the early response action will achieve the applicable goals in subsection (A) and how the early response action is consistent with A.R.S. § 49-282.06(A). The written rationale shall identify the information used to select the early response action as provided in subsection (B), how that information was considered, and how the selected method or technology was selected. Performance of a remedial investigation or feasibility study shall not be required to select or conduct an early response action.
- D. A work plan shall be prepared for each early response action. Each work plan shall include:
  1. A description of work to be done, a description of known site conditions, and a plan for conducting the work;
  2. A description of community involvement activities for the early response action under R18-16-404; and
  3. A schedule.
- E. If immediate action is necessary to address a current risk to public health or the environment, to protect a source of water, or to provide a supply of water, the work plan and written rationale may be prepared and the community involvement activities may be conducted after commencement of the early response action.
- F. Approval of an early response action under this Section does not constitute approval of the remedy for the site. The remedy for a site where an early response action is conducted shall be selected in accordance with R18-16-406 through R18-16-410. An early response action may be addressed, incorporated and modified as needed in the remedy selected under R18-16-410.
- G. After the Department has issued notice under A.R.S. § 49-287.03 for a site or a portion of a site, a person conducting an early response action at a site or portion of a site shall notify the Department, in writing, of the early response action. The notice shall contain a brief description of the early response action and shall be given at least 15 calendar days before the early response action is commenced, or as soon thereafter as practicable depending upon the exigencies of the circumstances. If the early response action has commenced before the Department issues notice under A.R.S. § 49-287.03, written notice of the early response action shall be given within 15 calendar days after the Department's notice is given. After notice of a proposed remedial action plan has been given under R18-16-408(C), an early response action may be initiated only after the Department has approved the early response action.
- H. Any person may submit a request to the Department under R18-16-413 to approve an early response action or a work plan for an early response action. The request shall include the work plan and the written rationale for the early response action. The Department shall approve the work plan or early response action if it complies with the following:
  1. The requirements of this Section and A.R.S. § 49-282.06(A);
  2. Community involvement activities under R18-16-404;
  3. The work plan provides for modifications to address unknown or changed conditions; and
  4. Any applicable requirements of R18-16-411 and R18-16-412.
- I. In considering whether an early response action is necessary to protect or provide a supply of water because a well is threatened by contamination, a well located in the area within 1/4 mile upgradient, 1/2 mile cross-gradient and 1 mile downgradient of the areal extent of contamination at the site shall be presumed to be threatened by the contamination. This presumption may be rebutted by evidence of local hydrology, geology, or geochemistry or by available information regarding the capture zone or rate of flow. In considering whether wells a greater distance from the areal extent of contamination are threatened, any evidence regarding local hydrology, geology, geochemistry, zone of capture, or rate of flow may be considered.

**R18-16-406. Remedial Investigations**

- A. The remedial investigation for a site or portion of a site shall:
  1. Establish the nature and extent of the contamination and the sources thereof.
  2. Identify current and potential impacts to public health, welfare, and the environment.
  3. Identify current and reasonably foreseeable uses of land and waters of the state, and
  4. Obtain and evaluate any other information necessary for identification and comparison of alternative remedial actions.
- B. The Department or any person may perform all or any portion of a remedial investigation, except that once the Department has issued a notice under A.R.S. § 49-287.03 for a site, a person may perform such work only under a written agreement with the Department. A work plan shall be developed and implemented for all or any portion of a remedial investigation for a site or a portion of the site, as follows:

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1. The work plan shall demonstrate that the work performed will meet the requirements of subsections (C) and (D) and that the work will be performed in accordance with guidance documents issued by the Department or standards or other guidance documents that are commonly accepted in the scientific community. Standards or guidance documents are considered to be commonly accepted in the scientific community if they are published in peer-reviewed literature such as a professional journal or publication of standards of general circulation, and if there is general consensus within the scientific community about the guidance document or standard.
  2. Each work plan shall include the following elements:
    - a. A description of the work, including any community involvement activities to satisfy any applicable requirements of R18-16-403 or R18-16-404, a statement of justification for the work, and a plan for conducting the work;
    - b. A quality assurance project plan;
    - c. A site location map;
    - d. A schedule;
    - e. A health and safety plan consistent with 29 CFR 1910.120; and
    - f. A sampling and analysis plan.
  3. A work plan may be modified as work proceeds to address unknown or changed conditions or access problems.
  4. Any person proposing to implement a work plan for all or a portion of a remedial investigation shall, before implementing the work plan, notify the Department in writing of the name and address of the working party and a general description of the work being performed. This notice is for the Department's information only and receipt of the notice shall not constitute approval of the work plan. A person seeking approval of a work plan by the Department shall submit a written request under R18-16-413.
- C.** The remedial investigation, which may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the investigation, shall include field investigations to assess the following factors:
1. Physical characteristics of the site, including important surface features, soils, geology, hydrogeology, meteorology, and ecology;
  2. The extent and general characteristics of the hazardous substances released, including physical state, concentration, toxicity, propensity to bioaccumulate, persistence, and mobility;
  3. The extent, general characteristics, and degree of the source of the release;
  4. Current and reasonably foreseeable exposure routes for the hazardous substances released, such as inhalation, ingestion and dermal;
  5. Other factors, such as sensitive populations, that pertain to the characterization of the site or support the analysis of potential remedies; and
  6. Current and reasonably foreseeable impacts to aquatic and terrestrial biota.
- D.** The remedial investigation shall include the collection of information regarding current and reasonably foreseeable uses of land or of waters of the state that have been or are threatened to be impacted by the release, and projected time-frames for future changes in those uses. Reasonably foreseeable uses of land are those uses of land likely to occur at the site. Reasonably foreseeable uses of water are those likely to occur within 100 years unless a longer time period is shown to be reasonable based on site-specific circumstances. Information may be solicited from any interested person including any known well owner. Information collected shall include:
1. Information regarding current and reasonably foreseeable uses of water for each aquifer that is impacted or threatened to be impacted by the release, considering any hydraulic connection between aquifers. The information shall include the locations and uses of existing wells, including all wells already impaired due to contamination, the locations and uses, if known, of any planned wells, and any written water management plans used by water providers whose water supplies may be impacted by the release. This information shall be collected in consultation with affected water providers.
  2. Information regarding current and reasonably foreseeable uses of water for each segment of surface water impacted or threatened to be impacted by the release. This information shall be collected in consultation with affected water providers.
  3. Information regarding current and reasonably foreseeable uses of land impacted or threatened to be impacted by the release within the community involvement area. General land use information shall include the current type of use, density, character, and governmental jurisdictions. Future land use changes shall be considered using population projections, growth, plans for future development and local land use plans. This information shall be collected in consultation with local governments with land use jurisdiction. The information collected shall also include specific land uses and property ownership for properties where the land use is impacted or threatened to be impacted by the release.
- E.** Using the data developed during the field investigation and information collected concerning uses of land and of waters of the state, a site-specific risk evaluation may be conducted to characterize the current risks to public health and the environment from contaminants of concern.



- E.** Following the collection of data necessary to adequately characterize the site or portion of the site and the collection of information necessary to determine the uses of land and of waters of the state, a draft remedial investigation report shall be prepared, and if prepared by a person other than the Department, submitted to the Department. The draft remedial investigation report shall include the results of any risk evaluation conducted under subsection (E). The draft remedial investigation report may consist of a summary of the data and information collected with references to the supporting documentation and the location of the public repository where those documents may be reviewed. Copies of the draft remedial investigation report prepared by or approved for release by the Department shall be provided to the community advisory board, interested local government agencies, affected water providers, and the Department of Water Resources. Copies of the draft remedial investigation report also shall be made available to the community under the community involvement plan. Public notice shall be given of the opportunity to comment on the draft remedial investigation report. This notice may be combined with the notice given under subsection (I)(1).
- G.** For remedial objectives used to select a soil remediation remedy, the landowner has the right to identify the type of land use in accordance with A.R.S. § 49-152 and 18 A.A.C. 7, Article 2. If the remedy for the site or portion of a site will address landfill or other non-soil materials other than waters of the state, the landowner may establish the current and reasonably foreseeable uses of its land provided that the remedial objectives for the site are not required to address land uses impaired by properties of materials located on or under the land other than the current or potential exposure to the hazardous substances contained in that material.
- H.** If the remedy for the site or a portion of the site will not address waters of the state, a final remedial investigation report may be prepared containing the results of the site characterization and a listing of remedial objectives. The remedial objectives shall be based on the current and reasonably foreseeable uses of the property in accordance with subsection (G) and stated in accordance with subsection (I)(4). The report shall be accompanied by responsiveness summaries regarding comments, issues, and concerns regarding the draft remedial investigation report under subsection (F), and if the report is prepared by a person other than the Department, copies of the comments received. The report may be submitted to the Department for review under R18-16-413. If the Department approves the report, the procedures in subsections (I) and (J) do not apply, and the approved report may be used to select a remedy under R18-16-407(C) or R18-16-407(D). Notice of the availability of the final remedial investigation report shall be provided with the notice under R18-16-408(C).
- I.** Except as provided in subsection (H), remedial objectives shall be developed as follows:
1. After the draft remedial investigation report is made available, the Department shall hold 1 or more public meetings to obtain information for purposes of establishing remedial objectives for the site. The Department shall provide notice of the public meeting. If a community advisory board has been formed for the site, public meeting arrangements shall be coordinated with the community advisory board. The initial public meeting shall be held not less than 45 calendar days and not more than 90 calendar days after release of the draft remedial investigation report, unless the Department sets a different date for good cause.
  2. At the public meeting, the Department shall solicit and consider proposed remedial objectives for the site. The Department also may receive and consider written information regarding proposed remedial objectives.
  3. Remedial objectives shall be generally consistent with the water management plans of all water providers whose water supplies are or may be impaired by the contamination and with the general land use plan established by the local land use jurisdiction.
  4. The Department shall prepare a report of the proposed remedial objectives for the site that shall list the current and reasonably foreseeable uses of land and the current and reasonably foreseeable beneficial uses of waters of the state. These uses shall be identified based upon information provided during the public meeting and any other information received. The report shall state the remedial objectives for each listed use in the following terms:
    - a. Protecting against the loss or impairment of each listed use that is threatened to be lost or impaired as a result of a release of a hazardous substance;
    - b. Restoring, replacing or otherwise providing for each listed use to the extent that it has been or will be lost or impaired as a result of a release of a hazardous substance;
    - c. Time-frames when action is needed to protect against or provide for the impairment or loss of the use; and
    - d. The projected duration of the action needed to protect or provide for the use.
  5. The Department shall provide notice and accept and consider public comment on the proposed remedial objectives in the remedial objectives report and shall hold at least 1 additional public meeting if significant public interest exists or if significant issues or information have been brought to the attention of the Department which have not been considered previously.
  6. The Department shall prepare a final remedial objectives report.
- J.** Following the community involvement activities regarding the draft remedial investigation report and the remedial objectives report, a final remedial investigation report shall be prepared containing the results of the site characterization and the final remedial objectives report. The final remedial investigation report shall be accompanied by responsiveness summaries regarding comments, issues and concerns raised in the community involvement process and, if the report is prepared by a person other than the Department, copies of the comments received. After completion of the

final remedial investigation report, changes to the remedial objectives are subject to the requirements of subsection (I). The Department shall provide notice of the availability of the final remedial investigation report.

- K.** Any person, other than a person proposing to perform work under an agreement under A.R.S. § 49-287.03(C), may submit a request under R18-16-413 for the Department to approve a work plan or a report for all or any portion of a remedial investigation. The Department shall approve a work plan for a remedial investigation if the request shows that the work will comply with this Section, community involvement activities will comply with R18-16-404, and the work plan provides for modifications to address unknown or changed conditions or access problems. The Department shall approve a draft remedial investigation report if the work is in compliance with an approved work plan or, if no work plan was approved, the remedial investigation complies with this Section and the community involvement activities have been conducted under this Article.

**R18-16-407. Feasibility Study**

- A.** The feasibility study is a process to identify a reference remedy and alternative remedies that appear to be capable of achieving remedial objectives and to evaluate them based on the comparison criteria to select a remedy that complies with A.R.S. § 49-282.06.
- B.** The Department or any person may perform all or any portion of a feasibility study, except that once the Department has issued a notice under A.R.S. § 49-287.03 for a site, a person may perform such work only under a written agreement with the Department. The feasibility study process shall include community involvement procedures in compliance with R18-16-404 and may be reported concurrently with the remedial investigation. A work plan shall be developed and implemented for all or any portion of a feasibility study for a site or a portion of a site, as follows:
1. The work plan shall demonstrate that the work performed will meet the requirements of this Section.
  2. A work plan may be modified as appropriate.
  3. Any person proposing to implement a work plan for all or a portion of a feasibility study shall, before implementing the work plan, notify the Department in writing of the name and address of the working party and a general description of the work being performed. This notice is for the Department's information only and receipt of the notice shall not constitute approval of the work plan. A person seeking approval of a work plan by the Department shall proceed under R18-16-413.
- C.** For remedies addressing only soils, an analysis of alternative remedies is not required. A feasibility study report shall be prepared that demonstrates:
1. That the proposed remedy addresses the contaminated soil in a manner that achieves compliance with A.R.S. § 49-152 and 18 A.A.C. 7, Article 2 and will achieve the remedial objectives for the use of the property.
  2. That the proposed remedy was selected based upon best engineering, geological, or hydrogeological judgment following engineering, geological, or hydrogeological standards of practice, considering the following information:
    - a. The remedial investigation;
    - b. Best available scientific information concerning available remedial methods and technologies;
    - c. A written analysis explaining how the remedy is consistent with A.R.S. § 49-282.06, including a brief explanation of the comparison criteria as applied to the remedy.
- D.** For remedies addressing only landfills that have not and will not impact groundwater or similar sites or portions of sites that have not and will not impact groundwater, and that contain material not subject to A.R.S. § 49-152 and 18 A.A.C. 7, Article 2, an analysis of alternative remedies is not required. A feasibility study report shall be prepared that demonstrates:
1. That the proposed remedy is designed to prevent human exposure to hazardous substances through the achievement of:
    - a. Soil remediation levels established under 18 A.A.C. 7, Article 2, or
    - b. Site-specific remediation levels based on a site-specific human health risk assessment, meeting a cumulative excess lifetime cancer risk between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$  and a hazard index no greater than 1. The excess lifetime cancer risk shall be selected by the Department based upon site specific factors including the presence of multiple contaminants, the existence of multiple pathways of exposure, the uncertainty of exposure, and the sensitivity of the exposed population. With prior approval of the Department, a person may achieve a site specific remediation level based on the use of institutional and engineering controls. The approval shall be based in part on the demonstration that the institutional and engineering controls will be maintained.
  2. That the proposed remedy was selected based upon best engineering, geological, or hydrogeological judgment following engineering, geological, or hydrogeological standards of practice, considering the following information:
    - a. The remedial investigation;
    - b. Best available scientific information concerning available remedial methods and technologies;
    - c. A written analysis explaining how the remedy is consistent with A.R.S. § 49-282.06, including a brief explanation of the comparison criteria as applied to the remedy.
  3. That the proposed remedy will achieve all of the remedial objectives.
- E.** For remedies other than provided in subsections (C) and (D), the feasibility study shall provide for the development of a reference remedy and at least two alternative remedies as follows:

1. The reference remedy and alternative remedies shall be capable of achieving all of the remedial objectives. The reference remedy and each alternative remedy shall consist of a remedial strategy under subsection (F) and all remedial measures to be employed. The combination of the remedial strategy and the remedial measures for each alternative remedy shall achieve the remedial objectives. The reference remedy and any alternative remedy also may include contingent remedial strategies or remedial measures to address reasonable uncertainties regarding the achievement of remedial objectives or uncertain time-frames in which remedial objectives will be achieved. The reference remedy and other alternative remedies shall be developed and described in the feasibility study report in sufficient detail to allow evaluation using the comparison criteria, but plans at construction level detail are not required. The units of measure set forth in Appendix A may be used, as applicable, for comparison of the relevant factors. Where appropriate, the reference remedy and an alternative remedy may incorporate different strategies for different aquifers or portions of aquifers.
  2. The reference remedy shall be developed based upon best engineering, geological, or hydrogeological judgment following engineering, geological, or hydrogeological standards of practice, considering the following:
    - a. The information in the remedial investigation;
    - b. The best available scientific information concerning available remedial technologies; and
    - c. Preliminary analysis of the comparison criteria and the ability of the reference remedy to comply with A.R.S. § 49-282.06.
  3. At a minimum, at least two alternative remedies shall be developed for comparison with the reference remedy. At least one of the alternative remedies must employ a remedial strategy or combination of strategies that is more aggressive than the reference remedy, and at least one of the alternative remedies must employ a remedial strategy or combination of strategies that is less aggressive than the reference remedy. For the purposes of this Section, a more aggressive strategy is a strategy that requires fewer remedial measures to achieve remedial objectives, a strategy that achieves remedial objectives in a shorter period of time, or a strategy that is more certain in the long term and requires fewer contingencies. With the Department's approval, one of the minimum required alternative remedies may use the same strategy as the reference remedy but use different viable technologies or a more intensive use of the same technology utilized in the reference remedy.
- E.** The remedial strategies to be developed under subsection (E) are listed below. Source control shall be considered as an element of the reference remedy and all alternative remedies, if applicable, except for the monitoring and no action alternatives. A strategy may incorporate more than one remediation technology or methodology, such as a plume remediation strategy that consists of a combination of pumping and treating in portions of an aquifer and monitored natural attenuation for other portions of the aquifer. The remedial strategies are:
1. Plume remediation is a strategy to achieve water quality standards for contaminants of concern in waters of the state throughout the site.
  2. Physical containment is a strategy to contain contaminants within definite boundaries.
  3. Controlled migration is a strategy to control the direction or rate of migration but not necessarily to contain migration of contaminants.
  4. Source control is a strategy to eliminate or mitigate a continuing source of contamination.
  5. Monitoring is a strategy to observe and evaluate the contamination at the site through the collection of data.
  6. No action is a strategy that consists of no action at a site.
- G.** Remedial measures necessary for each alternative remedy developed under subsection (E) to achieve remedial objectives or to satisfy the requirements of A.R.S. § 49-282.06(B)(4)(b) shall be identified in consultation with water providers or known well owners whose water supplies are affected by the release or threatened release of a hazardous substance. In identifying the remedial measures, the needs of the well owners and the water providers and their customers, including the quantity and quality of water, water rights and other legal constraints on water supplies, reliability of water supplies and any operational implications shall be considered. Such remedial measures may include, but are not limited to, well replacement, well modification, water treatment, provision of replacement water supplies, and engineering controls. Where remedial measures are relied upon to achieve remedial objectives, such remedial measures shall remain in effect as long as required to ensure the continued achievement of those objectives. The Department may require financial mechanisms to provide for the cost of implementation of the remedial measures.
- H.** The Department or any person who conducts a feasibility study by agreement with the Department shall conduct a comparative evaluation of the reference remedy and the alternative remedies developed under subsection (E). For each alternative, the evaluation shall be reported in a feasibility study report and shall include:
1. A demonstration that the remedial alternative will achieve the remedial objectives.
  2. An evaluation of consistency with the water management plans of affected water providers and the general land use plans of local governments with land use jurisdiction.
  3. An evaluation of the comparison criteria, including:
    - a. An evaluation of the practicability of the alternative, including its feasibility, short and long-term effectiveness, and reliability, considering site-specific conditions, characteristics of the contamination resulting from the release, performance capabilities of available technologies, and institutional considerations.

- b. An evaluation of risk, including the overall protectiveness of public health and aquatic and terrestrial biota under reasonably foreseeable use scenarios and end uses of water. This evaluation shall address:
  - i. Fate and transport of contaminants and concentrations and toxicity over the life of the remediation;
  - ii. Current and future land and resource use;
  - iii. Exposure pathways, duration of exposure, and changes in risk over the life of the remediation;
  - iv. Protection of public health and aquatic and terrestrial biota while implementing the remedial action and after the remedial action; and
  - v. Residual risk in the aquifer at the end of remediation.
- c. An evaluation of the cost of the remedial alternative, including the expenses and losses including capital, operating, maintenance, and life cycle costs. The cost analysis may include the analysis of uncertainties that may impact the cost of a remedial alternative, analysis of projected water uses and costs associated with use-based treatment, other use impairment costs of water not remediated to water quality standards, and the cost of measures such as alternative water supply or treatment. Transactional costs necessary to implement the remedial alternative, including the transactional costs of establishing long-term financial mechanisms, such as trust funds, for funding of an alternative remedy, shall be included in the cost estimate.
- d. An evaluation of the benefit, or value, of the remediation. This analysis includes factors such as:
  - i. Lowered risk to human and aquatic and terrestrial biota;
  - ii. Reduced concentration and reduced volume of contaminated water;
  - iii. Decreased liability; acceptance by the public;
  - iv. Aesthetics; preservation of existing uses;
  - v. Enhancement of future uses; and
  - vi. Improvements to local economies.
- e. A discussion of the comparison criteria, as evaluated in relation to each other.
- I. Based upon the evaluation and comparison of the reference remedy and the other alternative remedies developed under subsection (E), a proposed remedy shall be developed and described in the feasibility study report. The proposed remedy may be the reference remedy, any of the other alternative remedies evaluated in the feasibility study, or a different combination of remedial strategies and remedial measures that were included in the alternative remedies evaluated in the feasibility study. The feasibility study report shall describe the reasons for selection of the proposed remedy, including all of the following:
  - 1. How the proposed remedy will achieve the remedial objectives;
  - 2. How the comparison criteria were considered; and
  - 3. How the proposed remedy meets the requirements of A.R.S. § 49-282.06.
- J. Any person, other than a person proposing to perform work under an agreement under A.R.S. § 49-287.03(C), may submit a request in compliance with R18-16-413 for the Department to approve a work plan or a report for all or any portion of a feasibility study. The Department shall approve a work plan for a feasibility study if the request shows that the work will comply with this Section, community involvement activities will be performed in compliance with R18-16-404, and the work plan provides for modifications to comply with this Section. The Department shall approve a feasibility study report if the feasibility study complies with this Section and community involvement activities have been conducted under this Article.

**R18-16-408. Proposed Remedial Action Plan**

- A. Following the completion of the feasibility study report under R18-16-407(I), the Department or any person shall prepare a proposed remedial action plan, except once the Department has issued a notice under A.R.S. § 49-287.03, a person may prepare a proposed remedial action plan only under a written agreement with the Department.
- B. The proposed remedial action plan shall include the following:
  - 1. A description of the proposed remedy.
  - 2. The information required in A.R.S. § 49-287.04(a).
  - 3. A description of how the proposed remedy will achieve each of the remedial objectives identified in the final remedial investigation report under R18-16-406(J) and how accomplishment of the remedial objectives is to be measured.
  - 4. A description of all recharge, reinjection, discharge, transportation and use of remediated water as defined in A.R.S. § 49-283.01.
- C. Notice of the proposed remedial action plan shall be provided as follows:
  - 1. At a site where the A.R.S. § 49-287.03 notice has been provided, notice shall be provided by the Department in accordance with A.R.S. § 49-287.04(b) and the community involvement plan prepared under R18-16-404. If the Department intends to seek recovery of costs and conduct a cost allocation proceeding for the site, the notice shall also include the following:
    - a. The information required by A.R.S. § 49-287.04(c).
    - b. A statement of costs incurred at the site by the Department prior to the date of the notice and projected future costs for the site.

- c. All necessary information regarding the opportunities to submit costs, object to costs, or respond to objections to costs under R18-16-409, including a schedule for such submittal, review, objection and response to objection. The time period for submittal of costs shall not be less than 90 calendar days.
- d. If on the basis of new information or investigation notice is required to newly-identified parties, the notice sent under A.R.S. § 49-287.04 shall also include the information required by this Section.
- 2. At a site where the A.R.S. § 49-287.03 notice has not been provided, the person who prepared the plan shall provide notice under R18-16-404. The notice shall include the information contained in A.R.S. § 49-287.04(C).
- D. Any person, other than a person proposing to perform work under an agreement under A.R.S. § 49-287.03(c), may submit a proposed remedial action plan to the Department for approval under R18-16-413. The plan may be accompanied by a request for a determination of whether cost recovery by the Department may be appropriate under A.R.S. § 49-287.02. If the Department determines that cost recovery by the Department is not appropriate, notice shall be provided under subsection (C)(2).

**R18-16-409. Remedial Action Costs Credit**

- A. Any person seeking credit against potential liability at a site may submit to the Department, within the time period established in the notice given under R18-16-408(D), evidence of costs it has incurred or will incur for remedial actions undertaken at the site. The evidence of costs submitted shall include:
  - 1. Two copies of an itemized statement of costs, including a certification by the person submitting the statement that the statement is true, accurate and complete;
  - 2. Sufficient supporting documentation to establish that the costs are consistent with A.R.S. § 49-282.06 and this Article; and
  - 3. An agreement in which the person submitting the evidence of costs agrees to reimburse the Department for the Department's costs under subsection (F).
- B. Any itemized statements of costs submitted shall be available for review at both the repository for the site and the Department on or after the expiration of the time period established in subsection (A).
- C. Within a reasonable period of time set by the Department but not less than 30 calendar days, any person may object in writing to costs submitted by the Department or any other person under this Section. Written objections shall identify the specific costs to which the party objects and shall state specific reasons for the objection. Two copies of the objections shall be submitted to the Department and one copy of the objections shall be submitted to the person whose costs are the subject of objection.
- D. The Department and each person who submits an itemized statement of costs shall have an opportunity to respond to any objections within the time period specified in the notice given under R18-16-408 subsection (C) or (D). Two copies of the response shall be submitted to the Department and one copy of the response shall be submitted to the person objecting to the costs.
- E. The Department shall evaluate the statements of costs submitted, any objections to such statements, or other information available to the Department and shall approve those costs determined by the Department to be recoverable and in substantial compliance with A.R.S. § 49-282.06. The Department shall prepare a list of these approved costs for inclusion as part of the total estimated costs of the remedy in the record of decision under R18-16-410.
- F. Any person who requests the Department's approval of costs under this Section shall reimburse the Department for the total reasonable cost to the Department for the review unless the Department waives all or a part of the reimbursement. The total reasonable costs include direct and indirect costs to the Department in conducting these activities. Costs that are reimbursed to the Department by a person that obtains the Department's approval of costs under this Section constitute remedial action costs that may be recovered from responsible parties.
- G. The Department shall give credit not exceeding the amount of a person's liability for the costs approved under this Section. Nothing in this Article shall create a right of reimbursement from the fund for any costs incurred or to be incurred at a site.
- H. If the remedial action for which approval of costs is sought under this Section has not been previously approved by the Department, the submittal under subsection (A) shall be accompanied by a request for approval of the remedial action under R18-16-413.
- I. This Section is the exclusive process for the Department to approve the costs of a remedial action, and no other Department approval of a remedial action shall be considered as an approval of the costs of that remedial action.

**R18-16-410. Record of Decision**

- A. After the conclusion of all required public comment periods prescribed by A.R.S. § 49-287.04, the Department shall prepare a record of decision regarding the proposed remedial action plan. However, any person may prepare a proposed record of decision for consideration by the Department under R18-16-413 by submitting copies of the final remedial investigation report, the final feasibility study report, the proposed remedial action plan, all public comments and a proposed record of decision.
- B. The record of decision shall contain the following:
  - 1. A description of the remedy, including a description of any differences from the proposed remedial action plan.

2. A comprehensive responsiveness summary regarding all comments received on the proposed remedial action plan.
  3. A description of how the process for selecting the remedy complied with A.R.S. Title 49, Chapter 2, Article 5 and this Article, including all public comment and community involvement requirements.
  4. A demonstration that the remedy selected will achieve the remedial objectives selected in R18-16-406 and will remain in place as long as necessary to ensure continued achievement of those objectives.
  5. A demonstration that the remedy selected meets the requirements of A.R.S. § 49-282.06 and this Article.
  6. A time for commencing implementation of the remedy and a specific time period for completing the remedy.
  7. The total estimated cost of the remedy.
  8. A time-frame for review of the remedy to determine the effectiveness of the remedy in achieving the remedial objectives.
- C.** The total estimated cost of the remedy shall include:
1. Remedial action costs other than nonrecoverable costs incurred by the Department, including credit given in a settlement.
  2. Remedial action costs other than nonrecoverable costs incurred by the state.
  3. Remedial action costs other than nonrecoverable costs that have been approved by the Department under R18-16-409.
  4. Projected future remedial action costs other than nonrecoverable costs.
- D.** The record of decision shall be issued only by the Department. Notice of the record of decision shall be provided under A.R.S. § 49-287.04(G) and R18-16-404.
- E.** A record of decision may be amended in accordance with A.R.S. § 49-289(B), (C), and (D).

**R18-16-411. Design, Implementation, Operation and Maintenance of the Early Response Action or Remedy.**

- A.** Any person who intends to implement all or any portion of a remedy or an early response action shall obtain the Department's approval when required in either a record of decision or under subsection (C) or (E). The design and implementation of the remedy shall conform with the remedial action plan as adopted in the record of decision.
- B.** If the remedy or an early response action includes well replacement or provision of an alternative water supply, the Department or any person developing the design shall consult with the affected well owner or water provider. For a well owner, the design of that portion of the remedy or early response action shall meet the well owner's water quality and quantity needs in accordance with A.R.S. § 49-282.06(B)(4)(b) and R18-16-407(G). For a water provider, the design of that portion of the remedy or early response action shall:
1. Comply with laws and regulations governing the water provider's obligations to its customers;
  2. Be implementable without significant alteration of the water provider's existing system; and
  3. Meet the water provider's water quality and quantity needs in accordance with A.R.S. § 49-282.06(B)(4)(b) and R18-16-407(G).
- C.** The Department's approval of the design of any water treatment facilities is required prior to the construction as part of the remedy or an early response action. The design shall be based on an evaluation of potential treatment system failure that could affect public health and shall incorporate safeguards including any site-specific engineering and operation controls necessary to assure protection of public health against such failure. The safeguards shall incorporate, at a minimum, if applicable to the technology:
1. Monitors and alarms on all key treatment system components, e.g. power, air flow.
  2. Automatic termination of discharge from the treatment system when monitors detect abnormal operation of key treatment system components.
- D.** If operation and maintenance of a remedy following completion of construction are necessary to ensure the continued achievement of the remedial objectives, an operation and maintenance plan shall be prepared and implemented.
- E.** The Department's approval of an operation and maintenance plan shall be required for each WQARF site where the remedy or an early response action involves treatment of water to remove contaminants of concern at the site. The community advisory board, if one has been established for the site, shall be provided with the opportunity to comment on the operations and maintenance plan. Notice and community involvement shall be in accordance with R18-16-404. The operation and maintenance plan shall include:
1. Certification by the Department that the elements of the operations and maintenance plan adequately protect public health against treatment system failure.
  2. A schedule and plan for water quality monitoring.
  3. A requirement that affected water providers receive a copy of the completed application and a copy of the final permit for any National Pollutant Discharge Elimination System permit for the site.
  4. A process for the treatment system operator to promptly notify potentially affected water providers of a failure of a key treatment system component that could affect the quality of a discharge of treated water.
  5. For a discharge to a water of the United States, operational, maintenance and management practices to assure achievement of water quality discharge standards established in 18 A.A.C. 11 prior to the point of discharge for those volatile organic compounds which are contaminants of concern at the site.

- E. Any person who intends to implement any portion of a remedy may request the Department to approve the design or the operation and maintenance plan. A request for approval of a remedial design shall be submitted in accordance with R18-16-413. The Department shall approve any remedial design that is in compliance with this Section and the remedial action plan as adopted in the record of decision.
- G. The well owner or water provider whose water use is being addressed may, in its sole discretion, elect to construct, operate, or construct and operate the water treatment, well replacement or alternative water supply component of the remedy or early response action which is designed to address its use. This election shall not alter the responsibility of the Department or any person under A.R.S. Title 49, Chapter 2, Article 5 to fund all or a portion of the remedy or early response action. The well owner or water provider shall enter into a written agreement with the appropriate person that will govern the terms of the construction, operation or construction and operation of the water treatment, well replacement or alternative water supply component of the remedy.

**R18-16-412. Innovative Technologies**

- A. The Department may approve the use of an innovative technology for a site if the Department determines that the technology has been demonstrated to be reasonably likely to achieve its objectives and meets the other criteria set forth in this Article. Such a demonstration may be made through pilot or bench testing studies, peer reviewed studies, or other appropriate means of demonstration. If an innovative technology is approved as part of a remedy, the remedial action plan shall provide for a contingency in the event that the technology fails to achieve its objectives.
- B. The Department may use monies from the WQARF fund to contract for review of an innovative technology.
- C. The Department may provide incentives for the selection of the innovative technology that may include the following:
  - 1. The Department may agree not to assess penalties, issue a notice of violation, pursue an order, or take other enforcement action authorized by law for a delay that is caused by the use of the innovative technology provided that the party conducting the remedial action remains in compliance with the plans for implementing the innovative technology and implements a contingent remedial action in a timely manner.
  - 2. The Department may use monies from the Water Quality Assurance Revolving Fund to finance some or all of the use of the innovative technology.

**R18-16-413. Approval of Remedial Actions Under A.R.S. § 49-285(B)**

- A. Any person who seeks approval of a remedial action at a site or a portion of a site on the registry under A.R.S. § 49-285(B) shall submit a written request to the Department that contains all of the following:
  - 1. The name and address of the person submitting the request and the nature of the relationship of the person to the site, if any.
  - 2. The location and boundaries of the site or portion of the site addressed by the remedial action.
  - 3. The nature, degree, and extent of the hazardous substance contamination, if known.
  - 4. A description of any remedial action performed before the request is submitted.
  - 5. A work plan for any remedial action to be performed after the request is submitted.
  - 6. A demonstration of how the remedial action complied, or will comply, with this Article.
  - 7. A proposal for public notice and an opportunity for public comment on the application for approval under this Section. The proposal shall include a list of the names and addresses of persons whom the applicant believes to be responsible parties under A.R.S. § 49-283 and a summary of the basis for that belief.
  - 8. An agreement in which the person requesting the approval agrees:
    - a. To grant access to the Department as necessary to evaluate the request for approval.
    - b. To reimburse the Department for the Department's costs under subsection (G).
  - 9. An original seal imprint and signature of a registered professional if required by the Arizona Board of Technical Registrations under A.R.S. Title 32, Chapter 1 and the rules made under that Chapter.
- B. A request for approval under this Section may be combined with a no further action request under R18-16-414.
- C. The Department may request additional information necessary to evaluate or to take action on the request for approval.
- D. The Department shall provide notice of the request for approval and of the opportunity to comment on the request for approval.
- E. The Department shall, after considering public comments, approve a remedial action under this Section if the Department determines that the remedial action is in substantial compliance with this Article. The Department's approval shall be in writing and shall state the basis for the approval.
- F. The Department may deny approval of a remedial action under this Section if the remedial action does not meet the requirements of this Article, may request additional information, may request modification of the remedial action, or may condition approval of the remedial action on modifications necessary to achieve substantial compliance with this Article.
- G. The person making the request for approval shall reimburse the Department for the total reasonable cost of the Department's review and action under this Section, including costs of notices, unless the Department waives all or part of the reimbursement. The total reasonable costs include direct and indirect costs to the Department in conducting these activities.

- H. Approval of a remedial action under this Section does not constitute approval of the costs of conducting the remedial action.
- I. A remedial action approved by the Department under this Section shall be deemed to be in substantial compliance with this Article. The Department's approval under this Section is not required to preserve any right to recover remedial action costs under A.R.S. § 49-285.

**R18-16-414. Determination of No Further Action**

- A. The Department shall determine that no further action is necessary at a site or a portion of a site if, based upon the information submitted under A.R.S. § 49-287.01, the Department finds that the site or portion of the site does not present a significant risk to the public health, welfare, or the environment. The determination may be made by the Department based upon any of the following:
  - 1. A finding by the Department that the requirements of A.R.S. § 49-152 and 18 A.A.C. 7, Article 2 have been met shall be sufficient to support a determination that no further action is necessary for soils at the site or a portion of the site.
  - 2. A finding by the Department that no hazardous substances at the site or a portion of the site have impacted or will impact groundwater shall be sufficient to support a determination that the site or a portion of the site does not present a significant risk to groundwater.
  - 3. The determination of no further action for waters of the state at a site or a portion of the site may be made by the Department based upon any of the following:
    - a. A finding that the site or portion of a site has been remediated under a Title 49 program other than A.R.S. Title 49, Chapter 2, Article 5.
    - b. A finding that the release of a hazardous substance does not and will not exceed water quality standards in Title 18, Chapter 11 or if there is no water quality standard, a risk level approved by the Department to protect public health, welfare, and the environment.
    - c. A finding that there is no current or reasonably foreseeable use of water that would be impaired by the release, as determined by information collected under R18-16-406.
- B. A determination of no further action for a site or a portion of a site shall be published in the registry.
- C. If the remedial action for which a no further action determination is sought under this Section has not been previously approved by the Department, the submittal under subsection (A) may be accompanied by a request for approval of the remedial action under R18-16-413.

**R18-16-415. Soil Remediation**

- A. Soil remediation may be conducted as part of a remedy selected under R18-16-410 or may be conducted by any person at a site or portion of a site on the registry prior to the selection of a remedy if the following requirements are met:
  - 1. The soil remediation is performed in accordance with A.R.S. § 49-152 and 18 A.A.C. 7, Article 2.
  - 2. Community involvement activities are conducted in accordance with R18-16-404.
  - 3. A notice of remediation under R18-7-209 is prepared and submitted to the Department before the remediation is conducted. The notice of remediation shall be accompanied by a written report including the information described in R18-16-406(C)(1), (2), and (3). If the Department has issued a notice under A.R.S. § 49-287.03 for the site or portion of a site, the notice of remediation shall be submitted to the Department 15 calendar days before commencing the remediation or, if the remediation has commenced prior to the Department's notice, within 15 calendar days after the Department's notice is given.
- B. Submission of the information required under subsection (A) to the Department shall not be considered to be an approval of the soil remediation. Approval of a work plan for soil remediation work to be performed or approval for remediation performed under this Section may be obtained by submitting a request under R18-16-413. The Department shall approve the request if the request demonstrates that the soil remediation was conducted in accordance with this Section.
- C. The Department may request any additional information regarding the soil remediation in accordance with A.R.S. § 49-288.
- D. The Department may include information regarding soil remediation conducted under this Section in a record of decision for a remedy for the site or portion of the site under R18-16-410.

**R18-16-416. Satisfaction of Settlement Agreement and Achievement of Remedial Objectives**

- A. If the Department enters into a settlement under A.R.S. § 49-292 with a person who agrees to perform all or any portion of the remedy, the settlement agreement shall include criteria to determine when the work required by the settlement agreement is completed. A party to the settlement agreement who has performed all or a portion of a remedy may request a determination that the required work has been completed. The request shall describe how the requirements of the settlement agreement have been satisfied. The Department may require additional information to consider the request.
- B. Any person may request that the Department determine whether each of the remedial objectives for the site have been satisfied and will continue to be satisfied. The request shall demonstrate how the remedial objectives have been satis-



fied in accordance with the remedy and will continue to be satisfied, including information regarding any financial mechanisms in place to ensure the continued satisfaction of the remedial objectives. The Department may require additional information to consider the request. The Department shall issue notice of the request and provide an opportunity for public comment. Based upon the request and the public comments, the Department shall issue a written determination to approve or deny the request. If the request is approved, the written determination shall identify all actions that must continue to be taken to continue to satisfy the remedial objectives for the site.

**C.** Following an approval under subsection (B), the Department shall not undertake or require additional remedial action under this Article for the site or portion of the site other than the actions stated in the determination under subsection (B). However, the Department may reopen an investigation and take or require additional remedial action for any of the following reasons:

1. On discovery of new information which would result in the potential denial of a request under subsection (B).
2. That information submitted to the Department under subsection (B) was inaccurate, misleading, or incomplete.
3. The reopening of an investigation or the taking of a remedial action is necessary to respond to a release or the threat of a release of a hazardous substance that may present an imminent and substantial danger to the public health, welfare, or the environment.

**Appendix A. Standard Measurements for Comparison of Remedial Alternatives**

<b><u>Plume Characterization</u></b>	<b><u>Typical Units</u></b>
<u>Length</u>	<u>feet</u>
<u>Width</u>	<u>feet</u>
<u>Depth (thickness)</u>	<u>feet</u>
<u>Areal extent</u>	<u>acres</u>
<u>Volume</u>	<u>acre-feet</u>
<u>Plume leading edge advancement rate</u>	<u>feet/year</u>
<u>Plume volume expansion rate</u>	<u>acre-feet/year</u>
<b><u>Contaminant and Source Characterization</u></b>	
<u>Probable contributing sources</u>	<u>(number)</u>
<u>Number of contaminants</u>	<u>(number)</u>
<u>Maximum concentration of each contaminant</u>	<u>µg/l</u>
<u>Contaminant concentration vs. MCL</u>	<u>ratio</u>
<u>Contaminant mass in plume</u>	<u>pounds</u>
<u>Weighted average contaminant concentration in plume</u>	<u>µg/l</u>
<u>If present, estimated mass of LNAPL</u>	<u>pounds</u>
<u>If present, estimated mass of DNAPL</u>	<u>pounds</u>
<u>Sorbed contaminant mass in plume</u>	<u>pounds</u>
<u>Rate of downgradient contaminant mass transport</u>	<u>pounds/year</u>
<b><u>Remedial Efficiency</u></b>	
<u>Contaminant mass naturally degraded</u>	<u>pounds/year</u>
<u>Contaminant mass removed through remediation</u>	<u>pounds/year</u>
<u>Groundwater removed through remediation</u>	<u>acre-feet/year</u>
<u>Groundwater added (injected) by remediation</u>	<u>acre-feet/year</u>
<u>Net groundwater removed/added</u>	<u>acre-feet/year</u>
<u>Groundwater removed per year vs. plume volume expansion per year</u>	<u>percentage</u>

<u>Contaminant mass removed per year vs. pre-remedial contaminant mass transported downgradient per year</u>	<u>percentage</u>
<u>Time per first log cycle decline in average concentration</u>	<u>years per log cycle decline</u>
<b><u>Cost Efficiency</u></b>	
<u>Contaminant mass removal</u>	<u>\$ per pound</u>
<u>Groundwater removal</u>	<u>\$ per acre-foot</u>
<u>Cost per first cycle decline in average concentration</u>	<u>\$ per log cycle decline</u>

## **ARTICLE 5. INTERIM REMEDIAL ACTIONS**

### **R18-16-501. Definitions**

In addition to the definitions set forth in A.R.S. § 49-281, the following definitions shall apply in this Article, unless the context otherwise requires:

“Abandoned well” means a well that has been permanently sealed or closed with cement or a cement-bentonite mixture that cannot be re-entered except by redrilling the wellbore, or a well that has been formally abandoned under R12-15-816.

“Currently supplies water” means a well that supplies water at the time the request for interim remedial action is submitted to the Department. Wells that supply water as needed to meet demand, including wells that serve water on an infrequent basis, are considered to currently supply water under this definition.

“Department” means the Arizona Department of Environmental Quality.

“Interim remedial action” means an action taken by the Department or by a well owner or operator under A.R.S. § 49-282.03.

“Part of a public water system” means a well that is owned or operated by an operator of a public water system, but has not been abandoned. A well that has been capped, air gapped or closed due to contamination, but not abandoned, shall be considered part of a public water system.

“Public water system” has the same meaning as defined in 42 U.S.C. § 300(f).

“Registry sites” means sites that have been investigated and placed on the Water Quality Assurance Revolving Fund registry of sites.

“Remedy” has the same meaning as defined in A.R.S. § 49-281(13).

### **R18-16-502. Eligibility**

**A.** A well is eligible for consideration for funding or performance of interim remedial action if a remedy has not been selected and the well meets the following criteria:

1. The well currently supplies water for municipal, domestic, irrigation, or agricultural use or is currently part of a public water system;
2. The well produces water, or in the reasonably foreseeable future will produce water, that is not fit for its current or reasonably foreseeable end-use without treatment due to the release of hazardous substances at or from a site on the registry; and
3. The well is not an abandoned well.

**B.** Only costs directly related to an interim remedial action approved by the Department are eligible for funding from a grant from the Water Quality Assurance Revolving Fund. Costs incurred by any person after the date of submittal of a complete request which meets the requirements of R18-16-503 are eligible for funding if the request and proposed interim remedial action are subsequently approved by the Department. Costs incurred by any person prior to the submittal of a request under R18-16-503 are not reimbursable by the Department.

### **R18-16-503. Request for Interim Remedial Action**

**A.** Any person may request that the Department perform or provide a grant for an interim remedial action. The request shall be in writing and shall include a statement describing the eligibility of the well under R18-16-502 and a statement describing the reasons why interim remedial action is appropriate considering the factors in R18-16-504(A)(1) through (4). The request shall also include all of the following information that is in the possession of or is readily available to the person submitting the request:

1. A description of the well, including its location, Arizona Department of Water Resources registration number, construction details, and water production history.

2. An explanation of any water rights associated with the well and uses of the well, including any quality and quantity requirements associated with the end use of the water.
3. Any available water quality and water level data from the requesting party's wells that are the subject of the request.
4. Information that demonstrates that the well is contaminated or threatened by contamination from a release of hazardous substance from a registry site.
5. A proposal for interim remedial action, including a description of the proposed action, a schedule for implementation, and an estimate of the cost of the action.
6. A description of reasonable alternate interim remedial actions, costs associated with each alternative, and documentation supporting a finding that the proposed interim remedial action is the minimum necessary to address the loss or reduction of available water until a remedy is selected.
7. A description of any impacts the loss of the well would have on any assured water supply designation or any adequacy statement under 12 A.A.C. 7, Article 15, or on the ability of the water system to meet its legal obligations or its customer or user needs.
8. A description of the person's interest in the well and any limitations on the owner or operator's legal rights to use the well.

- B.** If the person requesting interim remedial action intends to perform all or part of the remedial action work, the Department may require submittal of a detailed work plan for the proposed action.

**R18-16-504. Review and Approval of Requests for Interim Remedial Action**

- A.** The Department shall approve or deny requests for interim remedial action or request modifications to the proposal based on the following:
1. Whether immediate action may prevent contamination of the well.
  2. Whether immediate action is necessary to provide for supply of water because contamination of the well is imminent.
  3. Whether the well is currently contaminated, and there are water supply needs including needs related to drought or emergency supply that would be addressed by the well but for the contamination.
  4. Whether the well is critical to the ability to satisfy the water supply needs of the well's users, including drought or emergency supply needs.
  5. Whether the proposed action or alternative actions are the minimum necessary to address the loss or reduction of water.
  6. Whether a proposed action is likely to be inconsistent with the final remedy.
  7. Any information that might reasonably suggest that the party requesting the interim remedial action is responsible for the release of hazardous substances contaminating the well.
  8. Funding considerations of the Department.
- B.** The Department may gather additional information before making a decision under subsection (A).
- C.** The Department shall condition approval of the request for interim remedial action upon execution by the requesting party of the following:
1. A reimbursement agreement under R18-16-505(C).
  2. An agreement, as appropriate, to provide the Department access to the property at reasonable times for the purpose of conducting or overseeing the interim remedial action or to gather information necessary to evaluate the interim remedial action.
- D.** If any person other than the Department performs the work, the Department shall require that person to submit contracts, invoices or other evidence that the work was performed.
- E.** The Department may initiate an early response action in lieu of granting the request for interim remedial action if the requested remedial action meets the requirements of R18-16-405.
- F.** An interim remedial action shall be the minimum action necessary to address the loss or reduction of water available to well users during the period before selection and implementation of a final remedy at a site. The Department may approve an action that provides a permanent solution to the water supply problem if a temporary solution is unavailable, more expensive, or incapable of fully addressing the problem during the period before a final remedy is implemented for the site.

**R18-16-505. Reimbursement**

- A.** If, in the record of decision, the Department determines that the interim remedial action taken was not necessary, based on criteria established in A.R.S. § 49-282.06, the Department shall require the person requesting the interim remedial action to reimburse all costs incurred in taking that action.
- B.** A person requesting the interim remedial action who is later determined by the Department to be a responsible party contributing to the contamination of the affected well shall reimburse the Department for all costs incurred by the Department in conducting or funding the interim remedial action.

- C.** The Department shall provide the person requesting the interim remedial action with a reimbursement agreement that clearly states the conditions under which the person requesting the interim remedial action must reimburse the Water Quality Assurance Revolving Fund. The person requesting the interim remedial action shall execute the reimbursement agreement as a prerequisite to approval of the interim remedial action. The Department may require that the person requesting the interim remedial action provide financial assurance for the obligation to reimburse the Water Quality Assurance Revolving Fund.